

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: CSSTP-0006-00(416) Gordon Pickens **OFFICE:** Engineering Services
P.I. No.: 0006416
SR 53 Widening **DATE:** August 6, 2009

FROM: Ronald E. Wishon, Project Review Engineer *REW*

TO: David Moore, District Design Engineer, Cartersville
Attn.: Cherie Marsh

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held April 6-9, 2009. Responses were received on August 6, 2009. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
RD-4	Use 4 ft paved shoulder	\$225,199	Yes	This will be done. A design variance will be requested.
RD-6	Utilize a new alignment north of existing SR 53	\$3,641,551	No	The recommended alignment would increase ROW costs, increase paving and leveling costs and increase earthwork costs. These costs would negate the proposed savings. Coordination with SHPO would be required regarding impacts to the Ryo Church, chapel and cemetery. Additional impacts to waters of the US would require mitigation.
RD-13	Eliminate retaining walls from Sta. 146+60 to Sta. 148+30	\$355,394	Yes	This will be done.
RD-14	Shift traffic in Construction Sequence (Phase 2C) and eliminate proposed shoring	\$209,000	Yes	This will be done.

RD-16	Provide westbound passing lanes	\$0	No	There is an existing 3,000 ft section of westbound passing lanes located 700 ft prior to the beginning of the project. The proposed vertical alignment begins a 5% upgrade within the project. The design of the project allows for extra lanes in the significant upgrade direction.
RD-17	Use 8 foot shoulders	Proposed = \$65,622 Actual = \$45,622	Yes	This will be done. A design variance will be requested. The savings were decreased to account for redesign costs.
RD-18	Reduce clear zone from 32 ft to 30 ft	\$84,199	Yes	This is within the allowable range in the Roadside Design Guide.
RD-19	Reduce pavement thickness on shoulder	\$365,640	No	OMR and the Pavement Design Committee have indicated that this recommendation will increase construction time and reduce the service life of the shoulder.
RD-20	Extend ROW to accommodate pipe maintenance at Sta. 147+36	Design Suggestion	Yes	This will be done.

The Office of Engineering Services concurs with the Project Manager's responses.

Approved:  Date: 8/10/09
 Gerald M. Ross, PE, Chief Engineer

REW/LLM
 Attachments

- c: Genetha Rice Singleton
- DeWayne Comer/David Moore/Cheri Marsh
- Patrick Bowers/Kenny Beckworth
- Nabil Raad
- Galen Barrow
- Lisa Myers
- Matt Sanders



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August 6, 2009

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 Value Engineering Report Responses
PI # 0006416
CSSTP-0006-00(416)
SR 53 Reconstruction
Gordon/Pickens Counties

Dear Ms. Myers:

We are pleased to submit our responses to the VE Study Recommendations for the referenced project. The VE Study was held April 6-9, 2009. The VE Study Report was received by Volkert and Associates, Inc. (Volkert) on April 30, 2009. A copy of the study recommendations along with the backup calculations are contained in this report. Volkert has reviewed the report and offers the following responses to the recommendations.

Alternative No. RD - 4

VE Recommendation: Use 4' paved shoulder for a cost savings of \$225,199.

Volkert Response: We will utilize a 4' paved shoulder as per your recommendation. The original paved shoulder width of 6' was selected in accordance with GDOT's Design Policy Manual, per section 6.2.1. A design variance will be required for utilizing a 4' paved shoulder.

Alternative No. RD - 6

VE Recommendation: Utilize a new alignment north of existing SR 53 for a cost savings of \$3,641,551.

Volkert Response: The recommended alignment is on new location north of the proposed alignment. It begins at a point located approximately 3,755 ft west from where the proposed alignment begins along existing SR 53 and ends approximately 370 ft east from where the chosen alignment ends along existing SR 53.

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Cost Evaluation

ROW Costs: The recommended alignment would increase the right-of-way cost over the proposed alignment by \$1,370,000.

Paving Costs: The paving cost for the recommended alignment would be approximately \$550,000 more than the estimate for the proposed alignment. This is because the alignment is longer compared to the chosen alignment and two T – intersections tying to the new alignment are anticipated at the beginning and end of the project.

Leveling Costs: The leveling cost for this alignment is \$135,000 compared to \$90,000 for the chosen alignment due to longer sections of existing roadway at the tie-ins, at the beginning and end of the project.

Earthwork Costs: The earthwork for this alignment is more balanced than the chosen alignment, but is more expensive because we are excavating about a 100,000 CY more dirt for this alternate alignment. Guardrail cost for this alignment is \$106,000, a cost increased of approximately \$70,000 from the chosen alignment. This is because for this alternate alignment, the fill is greater than that of the chosen alignment. CAICE files are available upon request for this analysis.

Environmental Evaluation

Historic Resources: Ryo Church, Outdoor Chapel, and Cemetery are located within the limits of the recommended alignment. The church, outdoor chapel and cemetery includes 2.18 acres of land located south and immediately adjacent to the existing SR 53 right-of-way at the intersection of Ryo Mountain Road. The church, outdoor chapel, and cemetery have been identified as being potentially eligible for the National Register of Historic Places (NRHP). An existing retaining wall currently exists at the cemetery along SR 53. The recommended alignment would require additional right-of-way from the cemetery and would likely require the re-location of several grave sites even if a new retaining wall were constructed to minimize encroachment upon the cemetery. It is also expected that the Ryo Church would have to be relocated. If the recommended alignment were chosen, significant coordination would be required with the State Historic Preservation Officer regarding impacts and mitigation to the church, chapel, and cemetery. A cemetery relocation permit would also have to be applied for and secured before construction.

Archeological Resources: No previously NRHP recorded archeological sites are located along the recommended alignment. However, field testing / survey would have to be conducted along the new alignment to confirm no previously unknown archeological sites exist within the proposed right-of-way.

Jurisdictional Waters of the US (Stream Sites and Wetlands): The new location portion of the recommended alignment generally traverses lower and flatter terrain than the proposed alignment. Several small ravines appear on USGS mapping of this area and many of these areas would likely contain ephemeral or perennial streams which would be categorized by the US COE as being jurisdictional. Review of soils maps and aerial photography also suggest that wetlands may occur along the new location portion of the recommended alignment. As a result, it would be expected that the recommended alignment would impact more than 0.50 acre of wetland/open water and/or 300 linear feet of stream at any single crossing. As a result, a US COE Individual Permit would be necessary and a Practical Alternatives Report (PAR) would have to be prepared and submitted to the US COE during the environmental review

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process. As part of the PAR process, efforts to minimize impacts to waters of the US would have to be evaluated. As a result, it is likely that retaining walls would be necessary at more locations for the recommended alignment than what is required for the proposed alignment. Mitigation credits would also have to be purchased from an approved mitigation bank to impacts to waters of the US.

Relocations: The recommended alignment would require 8 relocations including 2 commercial, 4 residential, 1 industrial, and 1 church. Many grave sites at the Ryo cemetery would also have to be relocated.

General Design Observations: Broken back curves are used at the beginning and end of this alternate alignment. This should generally be avoided as they are very undesirable from an operational and appearance standpoint.

It will be more costly to build this alternate alignment. The total cost for the VE Study Alignment, not including the Engineering Costs, would be \$14,787,319.62 compared with the cost of the current alignment of \$13,125,716.61. It is recommended that this alternative alignment not be implemented. Backup documentation is included at the end of the responses to the recommendations. The cost estimate can be supplied with backup information, if requested.

Alternative No. RD – 13

VE Recommendation: Eliminate retaining walls from station 146+60 to station 148+30 for a cost savings of \$355,394

Volkert Response: The retaining walls will be eliminated in this area.

Alternative No. RD – 14

VE Recommendation: Shift traffic in construction sequence and eliminate proposed shoring for a cost savings of \$209,000

Volkert Response: The shoring will be eliminated.

Alternative No. RD – 16

VE Recommendation: Provide westbound passing lanes

Volkert Response: There is approximately a 3,000 foot passing lane for westbound traffic approximately 700 feet before our project. In those 700 feet the existing passing lanes change from westbound to eastbound. In addition to that, our proposed vertical alignment begins an approximate five percent upgrade in our project. It is better to give the extra lanes to the significant upgrade direction. This would also increase the cost of the project by extending the limits of the project and modifying the striping.

Alternative No. RD – 17

VE Recommendation: Use 8' shoulders for a cost savings of \$65,622

Volkert Response: We will utilize an 8' shoulder as per your recommendation. The original shoulder width of 10' was selected in accordance with GDOT's Design Policy Manual, per section 6.2.1. A design variance will be required for utilizing an 8' shoulder width. The \$65,622 cost savings will need to be reduced by approximately \$20,000 due to engineering costs that will be required to modify the plans to meet the new cross section. The VE Study was performed when the plans are basically ready for the PFPR submittal, rework will have to be accomplished.

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Alternative No. RD – 18

VE Recommendation: Reduce clear zone to 30' from 32' for a cost savings of \$68,841.

Volkert Response: The clear zone will be reduced from 32' to 30'. No design variances OR exceptions will be required.

Alternative No. RD – 19

VE Recommendation: Reduce pavement thickness on shoulders for a cost savings of \$365,640

Volkert Response: This will not be done due to the recommendations of OMR. Please see the attached letter.

Alternative No. RD – 20

VE Recommendation: Extend Right – of – Way to accommodate pipe maintenance at station 147+36

Volkert Response: The Right – of – Way will be extended to accommodate pipe maintenance.

If you have any questions and/or need additional information, please call me.

Sincerely,



David McFarlin, P.E.
Vice President

Enclosures

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Chattanooga, Tennessee • Alexandria, Virginia • Washington, D.C. • Cary, Summerfield, North Carolina

Marsh, Cherie

Subject: FW: VE Study report for CSSTP-0006-00(416) Gordon Pickens PI No. 0006416

From: Jubran, Abdallah (AJ)
Sent: Wednesday, May 06, 2009 4:08 PM
To: Comer, DeWayne
Cc: Myers, Lisa
Subject: VE Study report for CSSTP-0006-00(416) Gordon Pickens PI No. 0006416

DeWayne,

Pavement Design Committee (PDC) members have reviewed VE Proposal RD-19, Reduce Pavement Thickness on Shoulders. The original plans use the same shoulder build up as the mainline. *The PDC does not concur with the VE proposal and recommends that the mainline typical section be used on the shoulders.*

The shoulder Pavement Build-up per Typical Sections consists of:

Layer	Thickness, inches	Spread Rate, lbs / sq. yd
9.5 mm SP	1.25	135
19 mm SP	2	220
25 mm SP	6	660
Graded Aggregate	10	n.a.

RD-19 proposes to eliminate the base asphalt layer and reduce the GAB layer thickness by 40%.

The Alternate proposed shoulder Pavement Build-up per VE Proposal RD-19 consists of:

Layer	Thickness, inches	Spread Rate, lbs / sq. yd
9.5 mm SP	1.25	135
19 mm SP	2	220
25 mm SP	0	0
Graded Aggregate	6	n.a.

The PDC *does not concur* with the changes for the following reasons:

- The minimum GAB layer for state routes in Gordon County is 10 inches
- The recommended alternate in RD-19 will require the contractor to have two grading operations
- The recommended alternate in RD-19 will require the contractor to have two paving operations
- The recommended alternate in RD-19 will result in a loss of production in the construction of the shoulder thereby increasing the time of construction and ultimately the cost of the construction.
- The recommended alternate in RD-19 will reduce the service life of the shoulder especially if there are trucks tracking over the shoulder around some of the curves along this route, thereby increasing the maintenance cost.

- The cost savings recommended in RD-19 are initial costs savings
- The VE study does not consider long term costs such as loss in pavement performance and future maintenance. When those costs are factored, initial costs savings may never be realized.

A.J. Jubran, P.E.
State Pavement Engineer
Georgia Department of Transportation
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PRECONSTRUCTION STATUS REPORT FOR PI:0006416

PROJ ID : 0006416
COUNTY : Gordon, Pickens
LENGTH (MI) : 1.50
PROJ NO. : CSSTP-0006-00(416)
PROJ MGR : Comer, DeWayne
AOHD Initials : CLM-T
OFFICE : District 6
CONSULTANT : Turnkey Consultant, (Contract with GDOT)
SPONSOR : GDOT
DESIGN FIRM : Volkert & Associates, Inc.

SR 53 FM E OF CR 269/RYO MOUNTAIN RD TO W OF CR 178/DAVIS RD
MPO : Not Urban
TIP # :
MODEL YR :
TYPE WORK : Realignment
CONCEPT : REALIGNMENT
PROG TYPE : Safety
Prov. for ITS : N
BOND PROJ. :

MGMT LET DATE : 09/15/2011
MGMT ROW DATE : 04/15/2010
SCHED LET DATE : 11/16/2011
WHO LETS? : GDOT Let
LET WITH :

SCHEDULED		TASKS		ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS						
START	FINISH						Activity	Approved	Proposed	Cost	Fund	Status	Date Auth
11/4/2009	11/4/2009	Concept Development		10/18/2004	3/9/2007	100	PE	2004	2004	2,318,421.70	Q21	AUTHORIZED	2/23/2004
		Concept Meeting		3/9/2007	3/9/2007	100	ROW	LUMP	LUMP	2,450,000.00	LS30	PRECST	
		PM Submit Concept Report		6/26/2007	6/26/2007	100	UTL	LUMP	LUMP	598,766.00	LS30	PRECST	
		Receive Preconstruction Concept Approval		7/13/2007	7/20/2007	100	CST	LUMP	LUMP	9,424,000.00	LS30	PRECST	
		Management Concept Approval Complete		7/20/2007	7/26/2007	100							
		Value Engineering Study		1/30/2009	1/9/2007	83							
		Public Information Open House Held		1/9/2007	1/9/2007	100							
		Environmental Approval		3/13/2006		83							
		Field Surveys/SDE		6/27/2006		0							
		Preliminary Plans		5/26/2008		73							
		Underground Storage Tanks				100							
		404 Permit Obtainment				0							
		PEPR Inspection				0							
		R/W Plans Preparation				0							
		R/W Plans Final Approval				0							
		L & D Approval				100							
		R/W Acquisition				0							
		Stake R/W				0							
		Soil Survey				100							
		Final Design				0							
		FPPR Inspection				0							
		Submit FPPR Responses (OES)				0							
		NO BRIDGE REQUIRED											
		CLM/JMD/STIM/Volkert & Associates, Inc.											
		[05-27-09] CEI NotOnSched[ROW] AJT QH GB											
		NOTIFICATION LETTER SENT TO GORDON & PICKENS 4-14-09.											
		PROJECT REQUESTED BY PNRC[LS 33A004/#1 6-05] #2 1-06/#3 10-07 LUMP SUM 0006131											
		LP-B/C-0.56-4/18/08											
		OCD SUJE:TK1.G14											
		SAFETY(REALIGN);FLY 6423/05,C-M/S/D(AS PER DISTRICT)9-23-05											

STIP AMOUNTS		District Comments	
Activity	Cost	Fund	
PE	2,450,000.00	Q21	
ROW	598,766.00	LS30	
UTL	9,424,000.00	LS30	
CST	0.00	LS30	
	0.00	LS30	

Acquired by: DOT
Acquisition MGR:
R/W Cert Date:
Cond. Filed:
Relocations:
Acquired:
Options - Pending:
Condemnations- Pend: