

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

-----  
**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** STP00-0003-00(625) Bleckley **OFFICE:** Engineering Services  
P.I. No.: 0003625  
SR 87/Cochran Bypass **DATE:** February 9, 2010

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

**TO:** Renee Decker, District Design Squad Leader, Tennille

**SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES**

The VE Study for the above project was held November 17 – 20, 2009. Responses were received on February 9, 2010. 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
A-4	Shorten the length of the SR 126 alignment from 1000 ft to 560 ft	\$146,025	Yes	This will be done. The intersection angle will be improved from 55° to 70°. The alignment will be shortened to 560 ft.
A-6	Eliminate the right turn lane at Sta. 240+00	\$11,397	No	The existing right turn lane for the Ace Hardware store was installed under a GDOT driveway permit in 1995. According to the Driveway and Encroachment Control Manual, for projects with speed design > 55 mph and traffic greater than 6000 vpd, right turn lanes are required when right turning traffic exceeds 50 vpd.
A-8	Move detour to another existing roadway (CR 141/CR 140) instead of building a temporary on-site detour	Proposed = \$451,563 Actual = \$916,741	Yes, with modifications	The temporary detour will be eliminated and US 23/SR 87 Bus will be used for the detour instead of CR 141/CR 140 as proposed by the VE Team. The cost to use the existing SR (\$31,388) will be less than constructing an onsite detour or improving the local roads to accommodate state route traffic. An intermediate completion date will be added to minimize the road closure.

A-10	Eliminate the two right turn lanes at CR 220/Cook Road	\$45,602	No	For two lane roads with AADT >10,000, right turn lanes are required when there are 50 right turning vehicles per day. The future right turn movements for these two roads are 150 and 625. These counts greatly exceed the minimum.
P-3	Adjust the profile of the RR bridge embankment to reduce the amount of borrow material	\$380,214	Yes	This will be done.
P-4	Use 1:1 stabilized slopes in lieu of 2:1 slopes for the embankment of the RR bridge	\$419,429	No	Due to the implementation of P-3, this cannot be done. Please note that OMR has provided more accurate costs for materials and labor for this work. (See attached responses.) It is not likely that the proposed savings could be realized.
S-1	Use 4 ft wide paved shoulder instead of 6.5 ft paved shoulder	\$434,574	Yes	The project is not on a bike route.
S-3	Make the inside lanes 11 ft wide instead of 12 ft wide	\$695,738	No	SR 87 is classified as a Rural Minor Arterial. The traffic volumes are 10,500 ADT for 2012 and 16,250 ADT for 2032. The speed design is 45/55 mph. The truck volume is 8%. Given the functional class and volume configuration, AASHTO recommends 12 ft travel lanes.
S-4	Make outside lanes 11 ft wide instead of 12 ft wide	\$695,738	No	SR 87 is classified as a Rural Minor Arterial. The traffic volumes are 10,500 ADT for 2012 and 16,250 ADT for 2032. The speed design is 45/55 mph. The truck volume is 8%. Given the functional class and volume configuration, AASHTO recommends 12 ft travel lanes.
S-5	Modify the parking lot pavement section to use asphaltic and GAB instead of all asphalt	Proposed = \$30,419 Actual = \$23,380	Yes, with modifications	This facility is a parking lot for cars; no buses will enter the parking area. OMR recommends using 8 inches of GAB instead of the 6 inches proposed by the VE Team. The minimum thickness used for state routes is 8 inches.
S-6	Reduce selected side road lane widths to 11 ft	\$32,757	Yes	This will be done.
S-7	Use 4 ft wide median in the area of the RR bridge embankment in lieu of 14 ft median	\$438,480	Yes	This will be done.

S-9	Modify the paved shoulder section to use GAB	Proposed = \$364,941 Actual = \$280,491	Yes, with modifications	OMR recommends using 8 inches of GAB instead of the 6 inches proposed by the VE Team. The minimum thickness used for state routes is 8 inches.
B-1	Use 8 ft shoulders on the bridge in lieu of 10 ft shoulders	\$86,745	Yes	This will be done.
B-3	Use MSE wall abutments in lieu of end spans	\$465,669	No	The use of MSE walls limits the ability for future modifications; therefore, the Bridge Office does not recommend using MSE walls. Additionally, the Bridge Office provided updated costs that would decrease the proposed savings to \$341,751. The original layout did not provide for future track expansion. In order to provide for the track expansion, the bridge length must increase by 16 ½ ft.
B-8	Update the bridge cost for correct area and unit prices	Design Suggestion	Yes	This will be done.
M-1	Increase the unit cost for traffic signals from \$47,000 to \$90,000 at SR 26 and \$150,000 for SR 126	Design Suggestion	Yes	This will be done.

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

Approved:  Date: 2/9/10  
 Gerald M. Ross, PE, Chief Engineer

REW/LLM  
 Attachments

- c: Ben Buchan
- Paul Liles/Bill Duvall/Bill Ingalsbe/Judy Meisner
- George Brewer/Alan Smith/Renee Decker/Matthew Sammons/Foster Grimes
- Jim Kitchings
- Rusty Merritt/Daniel Smith
- Nabil Raad
- Lisa Myers
- Matt Sanders

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## INTERDEPARTMENT CORRESPONDENCE

DATE February 9, 2010

FROM: Renee Decker, District Design Squad Leader

TO: Ronald E. Wishon, State Project Review Engineer

Attn: Lisa Myers

SUBJECT: STP00-0003-00(625) - Bleckley County

P.I. No.: 0003625

Value Engineering Study: Response to Recommendations

These are the responses to the Value Engineering Alternatives recommended by the Value Engineering Team:

ALT No.	Description	Savings PW & LCC	Implement	Comments
A-4	Shorten the length of the SR realignment from 1,000 ft to 560 ft long.	\$ 146,025	Yes	This will be done.
A-6	Eliminate the right turn lane at the private property located at STA 240+00.	\$ 11,397	No	This property has an existing deceleration lane that was installed under GDOT driveway permit # 0795-08-023 issued 7/11/95 to Bleckley County Ace. When this project is constructed, the existing deceleration lane will be over-taken. The department cannot obliterate an existing deceleration lane that we have already proven to be required for this business. The property owner paid for a deceleration lane originally & is entitled to have that replaced with this project.
A-8	Move the project detour to an existing roadway (Foskey Rd. and Denny Coley Rd.) in lieu of building a new on-site detour.	\$ 451,563 w/use of CR  \$ 916,741 w/use of SR87 Bus.	Yes, with modifications	This will be done, but with modifications to the detour route. Traffic Operations recommended changing the detour route to follow US 23/SR 87 Bus through Cochran. The intersection of SR 26 and SR 87 Bus was observed to verify that large truck traffic could make right turns. The cost to use the existing

Value Engineering Study Response

				state route (\$31,388) would be less than an onsite detour or the improvements of local roads to accommodate state route traffic. It would not be the most popular solution, but with the current economic situation, the construction money and time saved would outweigh any disruptions. An intermediate completion date would be needed to keep the closure time to a minimum.
A-10	Eliminate the two right turn lanes along SR 87 at Cook Road/CR220.	\$ 45,602	No	According to GDOT Driveway & Encroachment Control Manual, Section 4I-1-1, the minimum requirements for right turn deceleration lanes is 50 RTV a day for 2 or more lanes on Main roadways with AADT >= 10,000. The future right turn movements for these two roads are 150 and 625 RTV a day which exceed the minimum.
P-3	Adjust the profile at the railroad bridge embankment to reduce the amount of borrow excavation.	\$ 380,214	Yes	This will be done.
P-4	Use 1:1 stabilized slopes in lieu of the 2:1 slopes at the embankment for the railroad bridge.	\$ 419,429	No	This will not be implemented due to implementation of P-3 and responses from Thomas Scruggs with the Office of Materials & Research. He stated that when comparing 1:1 reinforced slopes in lieu of 2:1, the cost would not be justified. Based on calculations of a 2000' long section of embankment that is 20' high with 1:1 slopes it would save about \$51,852 in earthwork costs. However, the cost of the geogrid reinforcing & erosion control mat would be approx. \$131,746. Thus an additional \$79,894 would be spent on the reinforced 1:1 slope option. This does not include occasional maintenance costs that are common with these steeper slopes. In addition, when embankments are longer than 2000 ft, the cost difference becomes even greater. OMR also stated that "the \$5/sy for the slope stabilization used by the VE team is incorrect. Typical cost for reinforced slopes are

## Value Engineering Study Response

				about \$40-\$45/sy. In addition, an erosion control blanket must be used on these steep slopes, and that cost was not included in the study. The VE team only used cost for a 4-man crew for maintenance & repair, but in reality, heavy equipment would also be needed to perform the repairs.
S-1	Use 4ft wide paved shoulders in lieu of 6.5ft wide shoulders.	\$ 434,574	Yes	This will be done.
S-3	Make the inside lanes 11ft wide in lieu of 12ft wide.	\$ 695,738	No	SR 87 has a Rural Minor Arterial functional classification as per AASHTO Green Book. The predicted traffic volumes for this road are 10,500 ADT for the 2012 build year & 16,250 ADT for the 2032 design year. More importantly, the truck percentage for this route is 8%. Given this functional class and volume configuration, the AASHTO Green Book recommends 12-ft. travel lanes.
S-4	Make the outside lanes 11ft wide in lieu of 12ft wide.	\$ 695,738	No	See Comment S-3
S-5	Modify the parking lot pavement section to use asphaltic concrete and GAB in lieu of only asphaltic concrete.	\$30,419 w/ 6" GAB \$23,380 w/8" GAB	Yes, with modifications	This will be done with modification to the thickness of the GAB. OMR recommended using 8 inches of GAB rather than 6 inches suggested in the report.
S-6	Reduce the lane width of selected side roads from 12ft wide to 11ft wide.	\$ 32,757	Yes	This will be done.
S-7	Use a 4ft wide median in the area of the railroad bridge embankment in lieu of the 14ft wide median.	\$ 438,480	Yes	This will be done.
S-9	Modify the paved shoulder section to use asphaltic concrete & GAB instead of all asphaltic concrete.	\$ 364,941 w/6" GAB \$280,491 w/8" GAB	Yes, with Modifications	This will be done with modifications. OMR recommends using 8 inches of GAB rather than 6 inches. The min. thickness for state routes is 8 inches whether it is mainline or shoulders.
B-1	Use 8ft wide shoulders on the bridge in lieu of 10ft wide.	\$ 86,745	Yes	This will be done.

Project No: STP00-0003-00(625) Bleckley County

P.I. No: 0003625

Value Engineering Study Response

B-3	Use mechanically stabilized embankment (MSE) wall abutments and a single 69.5ft long span in lieu a 185ft long three span bridge.	\$465,669 \$ 345,751 Corrected Cost Savings	No	The Bridge Office does not recommend using MSE walls because future widening would be infeasible. The use of MSE walls limits the ability for future modifications that sloped embankments offer. The Bridge Office pointed out a couple of revisions to the VE teams cost estimates. Bridge-cost have come down to \$85/sf & the VE team used \$55/sf for wall costs that should actually be \$60 to \$65/sf. In addition, using the updated costs for calculating the wall & bridge, as well as the provision for future track reduce the actual savings produced by this option. The original layout did not provide for future track. Since we are now going to have to include that in the new layout, the bridge lengths will increase by 16.5 ft.
B-8	Update the bridge cost for correct area and unit prices.	DS	Yes	This will be done.
M-1	Increase the unit cost for traffic signals from \$47,000 to \$90,000 at SR 26 & \$150,000 for SR 126.	DS	Yes	This will be done.

If any further assistance is needed, please contact Renee Decker at (478) 552-4659.

A-4

**Myers, Lisa**

---

**From:** Decker, Renee  
**Sent:** Tuesday, February 09, 2010 11:39 AM  
**To:** Myers, Lisa  
**Subject:** RE: VE Study responses for STP00-0003-00(625) Bleckley PI No. 0003625  
**Attachments:** 0003625\_VEimplementation 2-9-10.docx

Lisa,

I have attached a modified report with us implementing the A-4. We have worked on the alignment and will change it to a 70° angle of intersect. It will be shortened to the 560 ft as recommended in the VE Study. This way we don't have to do a design exception or variance but yet we are improving the intersection since the existing angle of intersect is at 55°.

I sent it in a document format. If you need it in a pdf format, let me know.

Thanks,

*Renee' Decker, District Design Squad Leader  
GA Department of Transportation  
District 2 Design  
P. O. Box 8  
801 Highway 15 South  
Tennille, GA 31089  
(478) 552-4659  
[ddecker@dot.ga.gov](mailto:ddecker@dot.ga.gov)*

**Sammons, Matthew**

---

**From:** Decker, Renee  
**Sent:** Tuesday, January 26, 2010 7:25 AM  
**To:** Sammons, Matthew  
**Subject:** FW: STP00-0003-00(625) BLECKLEY\_\_\_OFF-SITE DETOUR

Info for VE

*Renee' Decker, District Design Squad Leader  
GA Department of Transportation  
District 2 Design  
P. O. Box 8  
801 Highway 15 South  
Tennille, GA 31089  
(478) 552-4659  
[ddecker@dot.ga.gov](mailto:ddecker@dot.ga.gov)*

**From:** Thomas, David (MIKE)  
**Sent:** Friday, January 22, 2010 7:36 AM  
**To:** Decker, Renee; Sammons, Matthew  
**Cc:** Merritt, Russell; Bean, Lynn; Brewer, George; Smith, Alan  
**Subject:** STP00-0003-00(625) BLECKLEY\_\_\_OFF-SITE DETOUR

Renee, the estimated cost for the proposed off-site detour is **\$24,033.27**.

This estimate is based on the Off-Site Detour plan sheet provided to this office. It includes the signs, posts, sign installation, sign maintenance during construction, sign removal, 10% overhead, and 10% profit.

This is the traffic control cost for the off-site detour only. Nothing else is included in this price.

Please contact me if you have any questions or comments.

MICHAEL D. THOMAS  
GEORGIA DEPARTMENT OF TRANSPORTATION  
DISTRICT CONSTRUCTION ESTIMATOR  
DISTRICT 2  
FAX # 478-552-4677  
PHONE # 478-552-4664

A-8

# COST WORKSHEET

PROJECT:	SR 87/COCHRAN BYPASS FROM US 23 BUSINESS TO EXISTING 4 LANE SECTION STP00-0003-00(625), P.I. No. 0003625 Bleckley County, Georgia - Preliminary Engineering Submittal	ALTERNATIVE NO.:  A-8  SHEET NO.: 4 of 4
----------	--	--

PROJECT ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/UNIT	TOTAL	NO. OF UNITS	COST/UNIT	TOTAL
Pavement - 3.5" asphalt / 6" GAB	SY	9,867	23.74	234,243			
Pavement - Overlay retained rdwy	SY	1,067	4.30	4,588			
Additional earthwork	CY	16,000	6.00	96,000			
R/R Crossing signal installation	LS	1	150,000.00	150,000			
Detour removal See Calculations	LS	1	150,000.00	150,000			
Construction Markup - 30.6%		0.306	634,831.00	194,258			
R/W - Temporary Easement	SF	320,000	0.15	48,000			
R/W - Markup - 148 %		1,480	48,000.00	71,040			
<b>Alt. - Detour on CR 141 &amp; CR 140:</b>							
Pavement Overlay - 3 in	SY				16,780	10.73	180,049
Upgrade R/R Crossing - signal installation	LS				1	150,000.00	150,000
Additional detour signing	LS				1	30,000.00	30,000
Misc items	LS				1	10,000.00	10,000
Raise shoulders to overlay	CY				1,017	10.00	10,170
Construction Markup - 30.6 %					0.306	380,219.00	116,347
<b>Alt - Detour on US 23 / SR 87 BUS:</b>							
Detour Signing	LS				1	24,034	24,034
Construction Markup - 30.6%						7354	7354
<b>TOTAL</b>						<b>31,388</b>	<b>31,388</b>
<b>SAVINGS</b>						<b>916,741</b>	<b>916,741</b>
<b>Subtotal</b>				948,129	496,566		
<b>(Markup included) TOTAL</b>				948,129	496,566		

P-4

Decker, Renee

**From:** Scruggs, Thomas  
**Sent:** Monday, January 04, 2010 9:30 AM  
**To:** Decker, Renee  
**Cc:** Sammons, Matthew  
**Subject:** RE: STP00-0003-00(625) Bleckley VE Study Recommendations (OMR) 2

I got the \$3.50/cy price from the item mean summary. It does seem somewhat low, but even if I double the price to \$7.00/cy (which is very high), the 1:1 slope option is still more expensive. The main problem with the calculations in the value engineering study is that they used a price of \$5/sy for the slope stabilization- this is off by a factor of almost 10. Typical costs for reinforced slopes are about \$40 to \$45 per sy. In addition, an erosion control blanket must be used on these steep slopes, and I don't see the cost for this in the study. Also, under maintenance and repair, the study is only showing a 4-man crew to perform repairs, when in reality, heavy equipment including a backhoe, dozer, compactor and trucks would be needed to excavate any failed areas, haul away poor/saturated material and haul back & compact better materials.

Even though my calculations were not for the entire project, the sample length that I looked at indicated that the 2:1 slopes would be less expensive. Let me know if you have any questions. Tom

Geotechnical Engineering Bureau  
Office of Materials and Research  
Georgia Department of Transportation  
15 Kennedy Drive  
Forest Park, Georgia 30297  
Phone 404-363-7548  
Fax 404-363-7684

---

**From:** Decker, Renee  
**Sent:** Thursday, December 31, 2009 3:53 PM  
**To:** Scruggs, Thomas  
**Cc:** Sammons, Matthew  
**Subject:** RE: STP00-0003-00(625) Bleckley VE Study Recommendations (OMR)

Mr. Scruggs,

I want to make sure I am doing the calculations for the VE Response correctly. In the VE Study, the consultant showed a calculation of \$7.48 /cy of Borrow Embankment. In your calculations, is the \$3.50/cy the cost that you used for Borrow Embankment? I have attached Sections P-3 from the VE Study that contains the consultant's calculations.

*This is my calculations and comparisons:*

**Original:**

Borrow Embankment 62,142 CY (from Report) x \$3.50 =	\$217,197
Markup @ 30.6%	= 66,554
	-----
TOTAL	\$284,051

Initial Cost Savings of

\$59,136

**Propose:**

Slope Stabilization 19,372 CY (from Report) X \$8.89*	= \$172,217
Markup @ 30.6%	=
52,698	

P-4

TOTAL

-----  
\$224,915

Using Sheet 6 of 6, the Total Life cycle savings ends up being no savings but actually costing and additional \$1,994.

\*The way I arrived at the \$8.89/cy of Slope Stabilization was by using your calculations for 14,815 cy with a total cost of \$131,746.

$\$131,746 / 14,815 \text{cy} = \$8.89/\text{cy}$

Any input would be appreciated. I want to make sure that I am making correct assumptions.

Thanks,

*Renee' Decker, District Design Squad Leader  
GA Department of Transportation  
District 2 Design  
P. O. Box 8  
801 Highway 15 South  
Tennille, GA 31089  
(478) 552-4659  
[ddecker@dot.ga.gov](mailto:ddecker@dot.ga.gov)*

---

**From:** Scruggs, Thomas  
**Sent:** Monday, December 28, 2009 1:31 PM  
**To:** Decker, Renee  
**Subject:** RE: STP00-0003-00(625) Bleckley VE Study Recommendations (OMR)

Renee- I wanted to respond to one of the VE proposals made on this project to use 1:1 reinforced slopes in lieu of 2:1 slopes. I have made some calculations based on a 2000' long section of embankment that is 20' high to determine what the earthwork savings are and what the cost of the reinforced slope would be. I calculated that 1:1 slopes would save about \$51,852 in earthwork costs. However, the cost of the geogrid reinforcing and erosion control mat would be approximately \$131,746. Thus an additional \$79,894 would be spent on the reinforced 1:1 slope option. This does not include occasional maintenance costs that are common with these steeper slopes. In addition, when embankments longer than 2000 feet are considered, the cost difference becomes even greater.

I have attached calculations showing both options. If I missed something, please let me know. It appears that 1:1 slopes are not justified. Let me know if you have any questions. Tom S.

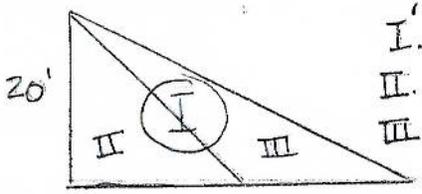
Geotechnical Engineering Bureau  
Office of Materials and Research  
Georgia Department of Transportation  
15 Kennedy Drive  
Forest Park, Georgia 30297  
Phone 404-363-7548  
Fax 404-363-7684

---

**From:** Geary, Georgene  
**Sent:** Thursday, December 17, 2009 3:26 PM  
**To:** Scruggs, Thomas  
**Subject:** FW: STP00-0003-00(625) Bleckley VE Study Recommendations

Cost comparisons of 2:1 slope vs 1:1 reinforced slope

STP00-0003-00 (625) Blackly  
Slope/Grid calculations  
TES 12/22/09



- I. Area =  $\frac{1}{2}(20 \times 40) = 400 \text{ ft}^2$
- II. Area =  $\frac{1}{2}(20 \cdot 20) = 200 \text{ ft}^2$
- III. Difference  $200 \text{ ft}^2$

Assume will use on 500' each side of bridge - total of 500' 2 sides - 2a ds = 2000'  
Earthwork = 2000' (200 ft<sup>2</sup>) = 14,815 cy x 3.50/cy (2008-09 item mean summary)  
Saved = \$51,852 savings

Cost of geogrid: 5 layers of Type A grid needed, 14.5' long (Using reinforced slope design soft-oc)  
7 layers of Type B grid needed, 4' long

Type A:  $5 \times 14.5 \times 2000' = 16,111 \text{ sy} \cdot \$6.10/\text{sy}$  (Item Mean Summary) = \$98,278

Type B:  $7 \times 4 \times 2000' = 6,222 \text{ sy} \cdot \$4.50/\text{sy} = \$28,000$

Erosion control blanket  $28.3 \text{ ft} \cdot 2000' = 56,569 \text{ sf} = 6285 \text{ sy}$   
Cost =  $.87(6285) = \$5468$

Total reinforced slope cost = \$131,746

Additional costs of <sup>increased</sup> maintenance not included

Reinforced slope cost much higher than 2:1 slope



# CALCULATIONS



PROJECT:	SR 87/COCHRAN BYPASS FROM US23 BUSINESS TO EXISTING 4 LANE SECTION STP00-0003-00(625), P.I. No. 0003625 Bleckley County, Georgia - Preliminary Engineering Submittal	ALTERNATIVE NO.:	S-5
		SHEET NO.:	3 of 4

"Original" Paved shoulder Cost:

SY Shoulder Pavement Cost:

135#/SY 9.5 mm Superpave:  $(135/2000)(\$63.70/TN) = \$4.30$   
 220#/SY 19 mm Superpave:  $(220/2000)(\$69.50/TN) = \$7.65$   
 440#/SY 25 mm Superpave:  $(440/2000)(\$65.32/TN) = \$14.37$

Total: \$26.32/SY

"Alternate" Paved shoulder Cost: (6" GAB)

SY Shoulder Pavement Cost:

135#/SY 9.5 mm Superpave:  $(135/2000)(\$63.70/TN) = \$4.30$   
 220#/SY 19 mm Superpave:  $(220/2000)(\$69.50/TN) = \$7.65$   
 6" GAB Base Coarse:  $[9(0.5)(150)/2000](\$17.46/TN) = \$5.90$

Total: \$17.85/SY

Area of Parking Lot:

$[(6ft + 12ft + 27ft) \times 550ft] / 9 SF/SY = 2,750 SY$

"Alternate" w/Modifications (8" GAB):

135#/sy 9.5 mm Superpave:  $(135/2000)(\$63.70/TN) = \$4.30$   
 220#/sy 19 mm Superpave:  $(220/2000)(\$69.50/TN) = \$7.65$   
 8" GAB Base Coarse:  $[9(0.67)(150)/2000](\$17.46/TN) = \$7.86$

TOTAL \$19.81/SY

55 + 39

**Decker, Renee**

---

**From:** Jubran, Abdallah (AJ)  
**Sent:** Wednesday, December 30, 2009 5:28 PM  
Decker, Renee  
**Cc:** Geary, Georgene; Scruggs, Thomas; Pahno, Steve V  
**Subject:** RE: STP00-0003-00(625) Bleckley VE Study Recommendations ( Pavement - 8" GAB)

Renee,

The minimum GAB layer thickness for state routes is 8 inches whether it is mainline or shoulder. Any exceptions need to be approved by the Geotechnical Bureau.

A.J. Jubran, P.E.  
State Pavement Engineer  
Georgia Department of Transportation  
404-363-7582  
404-363-7684 fax

[ajubran@dot.ga.gov](mailto:ajubran@dot.ga.gov)

Help GDOT serve you better. Visit <http://www.howmyservice.dot.ga.gov> and rate the service you received from Team GDOT.

**From:** Decker, Renee  
**Sent:** Wednesday, December 30, 2009 3:26 PM  
**To:** Jubran, Abdallah (AJ)  
**Subject:** RE: STP00-0003-00(625) Bleckley VE Study Recommendations (Pavement)

Jubran,

I am sorry we did not include the attached traffic data when we originally sent you the information.

This is my first VE Study. I am not sure if I have to have the analysis to go with my report but they do want justifications on everything.

If you can do an analysis, that would be great.

Thanks,

Renee' Decker, District Design Squad Leader  
GA Department of Transportation  
District 2 Design  
P. O. Box 8  
801 Highway 15 South  
Tennille, GA 31089  
(478) 552-4659  
[ddecker@dot.ga.gov](mailto:ddecker@dot.ga.gov)

**From:** Jubran, Abdallah (AJ)  
**Sent:** Wednesday, December 30, 2009 2:42 PM  
**To:** Decker, Renee  
Geary, Georgene; Pahno, Steve V  
**Subject:** RE: STP00-0003-00(625) Bleckley VE Study Recommendations (Pavement)

55 + 59

Renee,

This addresses the pavement related Alternates S-5 and S-9.

OMR recommends implementing both alternates **with modifications** as summarized below. The approved Soil Survey Summary recommends graded aggregate and soil cement as base materials not HMA.

Alternate S-5: replaces 4 inches of HMA base with 6 inches of graded aggregate for a parking lot.  
OMR recommends implementation using **8 inches of GAB**.

Alternate S-9: replaces 4 inches of HMA base with 6 inches of graded aggregate for mainline shoulders.  
OMR recommends implementation using **8 inches of GAB**. In addition OMR recommends considering full depth shoulders as the mainline. Full depth shoulders may have a higher initial cost but provide better long term performance and ease of construction.

A proper analysis can be done if traffic data including truck percentage breakdown are provided.

A.J. Jubran, P.E.  
State Pavement Engineer  
Georgia Department of Transportation  
404-363-7582  
404-363-7684 fax

[ajubran@dot.ga.gov](mailto:ajubran@dot.ga.gov)

Help GDOT serve you better. Visit <http://www.howsmyservice.dot.ga.gov> and rate the service you received from a Team GDOT.

---

**From:** Decker, Renee  
**Sent:** Thursday, December 17, 2009 12:07 PM  
**To:** DuVall, Bill; Jubran, Abdallah (AJ); Pahno, Steve V; Smith, Jimmy; Geary, Georgene  
**Cc:** Sammons, Matthew  
**Subject:** STP00-0003-00(625) Bleckley VE Study Recommendations

A Final Report (Received 12/3/09) for the VE Engineering Study conducted on the above noted project has been completed and put at the following location:

<\\Gdot.ad.local\gdot\UniversalCommon\Pccommon\VE Study Reports\0003625.pdf>

According to the attached letter from Lisa Myers, AVS, Value Engineering Coordinator. She notes if there is a recommendation altering a bridge, the responses must contain a letter or email from Bridge Design. If there is a recommendation altering a pavement design, the responses must contain a letter or email from OMR. Bridge Design and OMR have provided this information for numerous VE Studies. She directed us to contact Bill DuVall in Bridge Design and AJ Jubran and Steve Pahno at OMR. We will also need Traffic Operation concurrences as

5-9

# CALCULATIONS



PROJECT: SR 87/COCHRAN BYPASS FROM US23 BUSINESS TO  
 EXISTING 4 LANE SECTION  
 STP00-0003-00(625), P.I. No. 0003625  
 Bleckley County, Georgia - Preliminary Engineering Submittal

ALTERNATIVE NO.: S-9

SHEET NO.: 3 of 4

### Original Design Paved Shoulder Cost:

#### SY shoulder pavement cost:

135#/SY 9.5 mm Superpave: (135/2,000)(\$63.70/TN)	=	\$4.30
220#/SY 19 mm Superpave: (220/2,000)(\$69.50/TN)	=	\$7.65
440#/SY 25 mm Superpave: (440/2,000)(\$65.32/TN)	=	<u>\$14.37</u>
<b>Total:</b>		<b>\$26.32/SY</b>

### "Alternate" Paved shoulder Cost: (6" GAB)

#### SY Shoulder Pavement Cost:

135#/SY 9.5 mm Superpave: (135/2000)(\$63.70/TN)	=	\$4.30
220#/SY 19 mm Superpave: (220/2000)(\$69.50/TN)	=	\$7.65
6 in. GAB Base Coarse: [9(0.5)(150)/2000](\$17.46/TN)	=	<u>\$5.90</u>
<b>Total:</b>		<b>\$17.85/SY</b>

### Area of Paved Shoulders:

$$[(22,840 \text{ ft.}) (6.5 \text{ ft.} \times 2 \text{ sides})] / (9 \text{ SF/SY}) = 32,991 \text{ SY}$$

### "Alternate" w/Modifications (8" GAB)

135#/sy 9.5mm Superpave: (135/2000)(\$63.70/TN)	=	\$4.30
220#/sy 19mm Superpave: (220/2000)(69.50/TN)	=	\$7.65
8in. GAB Base Course: [9(0.67)(150)/2000](\$17.46)	=	<u>\$7.86</u>
<b>TOTAL</b>		<b>\$19.81</b>



Decker, Renee

S-7, B-1 + B-3

**From:** Meisner, Judy  
**Sent:** Wednesday, December 30, 2009 8:23 AM  
Decker, Renee  
**Cc:** Sammons, Matthew; Grimes, Ron  
**Subject:** RE: STP00-0003-00(625) Bleckley County P.I. 0003625 (Bridge VE comments)

Good morning Renee',

I hope you had a good holiday. I am always glad when the craziness is over and I can look forward to a new year.

→ Concerning S-7, it does not matter to us whether the median is 14' or 4' as long as we can get vertical clearance in the area of the RR. As far as the location of the track, we can put it on either side as long as we just provide them the additional area. If they decide to build a track later, they can build switch tracks in order to do what they need to do.

Since the project parameters have changed significantly since the first layout was designed, I can't give you a definite length of the bridge until I see what the new profile is going to be like. Once you provide that to me, I can set the bridge ends. Do you have to provide a cost estimate before the new layout is done?

Let me know if I can do anything else to help.

Have a great day!  
Judy

---

**From:** Decker, Renee  
**Sent:** Tuesday, December 22, 2009 8:03 AM  
**To:** Meisner, Judy  
**Cc:** Sammons, Matthew  
**Subject:** FW: STP00-0003-00(625) Bleckley County P.I. 0003625 Bridge VE comments

Judy,

We also wanted to bring to your attention S-7 concerning the median in the area of the railroad. They want us to go to a 4 ft wide median in the area of the railroad in lieu of the 14 ft wide. Do you see any problems in implementing this?

Also, Matt needs to know where the provisions for the additional track will be located since he has to set the new profile and keep it above the minimum height. For example, if we put the additional track in the area of Station 133+00 to 135+00 then the profile will not be affected as much as it would be if the provisions are made in the area of Station 130+00 to 132+00. We tried to look down the tracks to see if there was an area where other tracks may be coming in, but we really didn't see anything that would help us in deciding which side it should go on. Hope you may know more about where it should go.

Thanks again,

*Renee' Decker, District Design Squad Leader  
GA Department of Transportation  
District 2 Design  
P. O. Box 8  
801 Highway 15 South  
Milledgeville, GA 31089  
(7, 0) 552-4659  
[ddecker@dot.ga.gov](mailto:ddecker@dot.ga.gov)*

B-1 + B-3

---

**From:** Sammons, Matthew  
**Sent:** Monday, December 21, 2009 3:31 PM  
**To:** Decker, Renee  
**Subject:** FW: STP00-0003-00(625) Bleckley County P.I. 0003625 Bridge VE comments

Renee I have added the information on our responses file. It can be located at N:\Projects\Bleckley\0003625 STP-0003-00(625)\VE STUDY\VE STUDY INFORMATION\VE STUDY RESPONSE 0003625 Response to VE Study Recommendations.docx

---

**From:** Meisner, Judy  
**Sent:** Monday, December 21, 2009 3:25 PM  
**To:** Sammons, Matthew  
**Cc:** Grimes, Ron; Ingalsbe, Bill  
**Subject:** RE: STP00-0003-00(625) Bleckley County P.I. 0003625 Bridge VE comments

Matthew,

Bridge costs have come down and you should now be using \$85/sf. Also, the VE team used \$55/sf for wall costs. This number should be \$60-\$65/sf. Additionally, the original layout did not provide for future track capability. Since we are now going to have to include that in the new layout, the bridge length will increase by 16.5 feet. So, our responses are as follows:

- B-1, yes we will be implementing this.
- B-3, we do not recommend using MSE walls because future widening would then be infeasible. In addition, using the stated costs for calculating the wall and bridge, as well as the provision for future track reduce the actual savings produced by this option.

If you have any more questions, please let me know.

Judy Meisner  
GDOT  
Office of Bridge and Structural Design  
One Georgia Center  
Floor 24  
Atlanta, GA 30308  
404-631-1899

---

**From:** Sammons, Matthew  
**Sent:** Tuesday, December 08, 2009 1:23 PM  
**To:** Meisner, Judy  
**Cc:** Decker, Renee  
**Subject:** STP00-0003-00(625) Bleckley County P.I. 0003625 Bridge VE comments

Judy,

We have received our VE Study Report concerning the above mentioned project. We have a few things concerning the bridge. We are going to lower our profile at the railroad bridge embankment to reduce the amount of borrow material (noted on P-3 from the VE report).

The VE study has recommended 8 ft. wide shoulders on the bridge in lieu of 10 ft. wide (noted on B-1 from the VE report). It also recommends to use mechanically stabilized earth (MSE) wall abutments and a single 69.5 ft. long span in

B-1 + B-3

lieu of a 185 ft. long three span bridge (noted on B-3 from the VE report). Also note in previous discussions the bridge will need additional width due to the future track for Norfolk Southern Railroad. I need to know the approximate station where the track would be located so I can keep my profile at the minimum clearance?

This will also change the cost of the bridge. B-8 states that we would need an updated bridge cost for correct area unit prices (noted on B-8 from the VE report). Would I be correct in using \$95 per sq ft for bridge cost?

Please forward us your justifications for B-1 and B-3 if you do not plan to implement them. Please respond as soon as possible since the VE Team need the responses before January 3, 2010.

**\*note I have attached the final summary of potential cost savings from the VE Study\***

Questions or Comments? Call or e-mail:

Matthew Sammons  
CAD Operator III  
Department of Transportation  
P.O. Box 8 / 801 Fourth Street  
Tennille, Georgia 31089  
478-553-2275  
Fax: 478-552-4677  
[msammons@dot.ga.gov](mailto:msammons@dot.ga.gov)

B-3

# COST WORKSHEET



PROJECT	SR 87/COCHRAN BYPASS FROM US23 BUSINESS TO EXISTING 4 LANE SECTION STP00-0003-000625, P.J. No. 0003625 Bleckley County, Georgia - Preliminary Engineering Submittal	ALTERNATIVE NO.:	B-3
		SHEET NO.:	5 of 5

PROJECT ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
Bridge area	SF	15,729	90.00	1,415,610	5,925	90.00	533,250
Wall area	SF				8,560	55.00	470,800
Full-depth pavement	SY				1,048	52.48	54,999
<b>BRIDGE ADJUSTED FOR FUTURE TRACK</b>							
Bridge		17136	85.00	1,456,560	7332	85.00	623,220
Wall					8560	60	513,600
Full Depth Pavement					1048	52.48	54,999
				1,456,560			1,191,819
		markup		445,707			364,697
				1,902,267			1,556,516
				<b>DIFF =</b>		<b>345,751</b>	
Subtotal				1,415,610			1,059,049
Markup (%) at	30.6%			433,177			324,069
<b>TOTAL</b>				<b>1,848,787</b>			<b>1,383,118</b>

DIFF = 465,669





PRECONSTRUCTION STATUS REPORT FOR PL0003625

SR 87/COCHRAN BYPASS FM US 23BU TO EXISTING 4 LN SECTION  
 MGMT LET DATE : 07/15/2012  
 MGMT ROW DATE : 07/16/2010  
 BASELINE LET DATE: 07/13/2012  
 SCHED LET DATE : 6/29/2012  
 WHO LETS?: GDOT Let  
 LET WITH :

PRIORITY CODE: 2  
 DOT DIST: 8  
 CONG. DIST: N  
 BIKE: E  
 MEASURE: 4  
 NEEDS SCORE: 4  
 BRIDGE SUFF:

MPO: Not Urban  
 TIP #: Widening  
 MODEL YR : WIDEN & RECON  
 TYPE WORK: Reconstruction/Rehabilitation  
 CONCEPT: N  
 PROG TYPE: N  
 Prov. for ITS: N

PROJ ID : 0003625  
 COUNTY : Bleckley  
 LENGTH (MI) : 4.00  
 PROJ NO.: STP00-0003-00(625)  
 PROJ MGR: Decker, Renee  
 AOHD Initials: GMB  
 OFFICE : District 2  
 CONSULTANT: No Consultant, GDOT In-House Design  
 SPONSOR : GDOT  
 DESIGN FIRM:

BASE START	BASE FINISH	LATE START	LATE FINISH	TASKS	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS				Date Auth		
								Activity	Approved	Proposed	Cost		Fund	Status
12/2/2011	2/16/2012	11/18/2011		Concept Development	4/8/2004	9/13/2004	100	PE	2004	2004	600,000.00	Q24	AUTHORIZED	12/13/2003
4/30/2010	4/30/2010	4/16/2010		Concept Meeting	7/29/2004	7/29/2004	100	ROW	2011	2011	1,403,002.82	L240	PREGST	
5/3/2010	5/28/2010	4/19/2010		PM Submit Concept Report	8/2/2004	8/2/2004	100	CST	LR	LR	32,944,820.60	L240	PREGST	
5/31/2010	7/1/2010	5/17/2010		Receive Preconstruction Concept Approval	8/11/2004	8/18/2004	100							
6/8/2010	6/10/2010	5/25/2010		Management Concept Approval Complete	8/25/2004	9/13/2004	100							
7/9/2010	7/22/2010	6/25/2010		Value Engineering Study	8/27/2009		65							
10/29/2010	11/11/2010	10/15/2010		Environmental Approval	2/24/2006		50							
3/31/2010	8/13/2010	3/26/2010		Mapping	4/7/2005	6/14/2005	100							
6/11/2010	12/1/2011	5/28/2010		Field Surveys/SDE	9/22/2005	10/31/2006	100							
12/23/2011	1/28/2011	12/9/2011		Preliminary Plans	10/31/2006		49							
1/9/2012	1/20/2012	12/26/2011		Preliminary Bridge Design	4/9/2008		50							
				Underground Storage Tanks	5/5/2008	9/10/2009	100							
				404 Permit Obtainment			0	PE Cost Est Amt:	600,000.00	Date:	6/15/2009	Activity	Cost	Fund
				PFPR Inspection			0	ROW Cost Est Amt:	1,225,437.00	Date:	11/20/2009	PE	0.00	Q24
				R/W Plans Preparation			0	CST Cost Est Amt:	20,225,262.00	Date:		ROW	1,398,000.00	L240
				R/W Plans Final Approval			0					CST	0.00	1,240
				L & D Approval			0							
				R/W Authorization			0							
				Stake R/W			0							
				Soil Survey	4/7/2008	8/28/2008	100							
				Bridge Foundation Investigation			0							
				Final Design			2							
				Final Bridge Plans Preparation	9/1/2009		15							
				FFPR Inspection			0							
				Submit FFPR Responses(OES)			0							

**PDD:** Dec01 L.R. assigned District 2  
 Bridge: RAG 01/06/10  
 Design: (MS) Need EC, 11/17 & 11/19/09 VE Study  
 EIS: CE / Not Apvd / OnSchedRW / 10-19-09 (JK)  
 LGPA: BLECKLEY REF DO UTILITIES 7-30-03/RESCISSION LETTER SENT 7-29-04  
 Programming: 2/6/03 At request of Paul Mullins move P1332900- Row out to 07 to move this project's PE into 2003#1  
 10-09  
 Traffic Op: KSBDD2 TO COMPLT S/M/TMC SIGNALS 8/25/03  
 Utility: (RL) Need 2nd sub plans from PM.  
 EMG: 2115 (H85(94)-W/V(88))

**Pre. Parcel CT:** 74 **Total Parcel in ROW System:**  
**Under Review:** Options - Pending:  
 Released: Condemnations- Pend:  
**Acquired by:** DOT  
**Acquisition MGR:**  
**R/W Cert Date:**  
**DEEDS CT:**