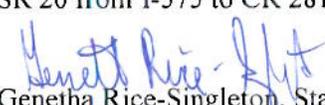


DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE CSSTP-0009-00(164), Cherokee County OFFICE Program Delivery
P.I. No. 0009164
SR 20 from I-575 to CR 281/Scott Road DATE March 6, 2013

FROM  Genetha Rice-Singleton, State Program Delivery Engineer

TO Lisa Myers, State Review Engineer

SUBJECT Request to Partially Reverse Implemented VE Study Recommendation

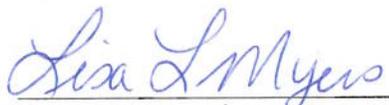
A Value Engineering Study for road widening project 0009164 and truck climbing lanes project 632790 was conducted on this project October 28-31, 2008. Alternative RD-7 recommended using 5' sidewalks in lieu of 8' sidewalks for a savings of approximately \$141,835. Implementation of RD-7 was approved by the Chief Engineer on February 19, 2009.

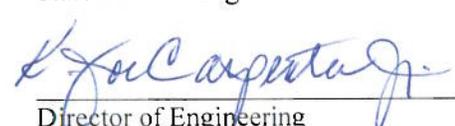
Further discussions with the City of Canton have revealed that the City's master plan calls for 6' sidewalks with 4' grass pedestrian buffer area on streets within the City Limits. In accordance with our Complete Streets policy, and after evaluation of this change to the schedule and budget, the project team has determined that the sidewalks should match the City's master plan. The ROW impacts of this change will be minimal due to the setbacks of the commercial businesses on the south side of the road. The reduction of the sidewalks from 8' to 6', rather than 5', will result in a savings of approximately \$112,835.

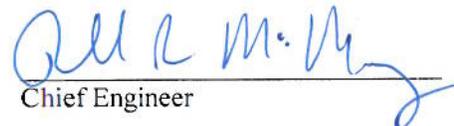
Additionally, RD-6 recommended using a single multi-use trail instead of bike lanes. This recommendation was rejected and the stated reason was that SR 20 was on a statewide bike plan. Additional research on this as revealed that SR 20 is not on a statewide bike plan, nor is it on the Cherokee County or City of Canton bike network. Therefore, this recommendation will be accepted, and no bike lanes will be provided with this improvement. This will result in an additional savings of \$410,633.

If there are any questions please contact Karyn Matthews of this Office at (404) 631-1584.

^{AVS}
GRS:AVS:KMM

Approved:  State Review Engineer 3/12/13
Date

Approved:  Director of Engineering 3/12/13
Date

Approved:  Chief Engineer 3/18/13
Date

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-0012-01(107)
CSSTP-0009-00(164), Cherokee County
P. I. Nos.: 632790 & 0009164
SR 20 Widening and Truck Climbing Lanes

OFFICE: Engineering Services

DATE: February 17, 2009

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

TO: Kent L. Sager, District Engineer
Attention: DeWayne Comer, Project Manager

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate alternatives recommended for implementation to the extent reasonable in the design of the project.

**SR 20 Widening from I-575 to CR 288/Scott Rd. – CSSTP-0009-00(164),
PI No.0009164**

ALT No.	Description	Savings PW & LCC	Implement	Comments
ROADWAY (RD)				
RD-6	Use a single multi-use trail in lieu of bike lanes/sidewalk.	\$410,633	No	The project limits are within a section that is on the Statewide Bicycle Plan.
RD-7	Use 5' sidewalks in lieu of 8' sidewalks.	Proposed= \$737,809 Actual= \$141,835	Yes	The additional \$595,974 savings was in commercial ROW which will not change due to the coordination with the developer and City of Canton.
RD-11	Use MSE wall in lieu of poured in place GA STD 4948-B retaining wall for wall number one.	Proposed= \$29,391 Actual= \$39,600	Yes	MSE walls offer savings but impacts historic property boundaries. By using the 4948-C wall instead of 4948-B wall, a savings of \$39,600 is realized.
RD-12	Use modular block wall in lieu of poured in place GA STD 4948-B retaining wall for wall number one.	\$94,766	No	See above. Already implementing GA STD 4849-C retaining wall for wall number one.

SR 20 Truck Climbing Lanes – STP00-0012-01(107), PI #632790

ALT No.	Description	Savings PW & LCC	Implement	Comments
TRUCK CLIMBING LANES (TCL)				
TCL-3	Use Bi-directional "passing lanes" in lieu of truck climbing lanes.	\$508,462	No	According to HCM 2000, the optimal passing lane length for +700 pc/h is 1-2 miles. The VE proposal is two-1,000 foot long passing lanes and the original design calls for one-1.6 mile long passing lane. The project flow rate in 2031 will be 1,850 pc/h.
TCL-4	Do not realign Water Tank Road.	\$67,948	No	Right of Way has already been purchased and additional utility impacts would occur.
TCL-5	Reduce side road improvements of Cotton Road and Old Orange Mill Road.	\$59,073	No	Construction is necessary to provide intersection sight distance and to meet the new mainline pavement profile which is to be lowered.
TCL-7	Terminate the eastbound two-lane section at Sta. 3105+00 in lieu of Sta. 3120+00.	\$247,342	No	According to AASHTO, the ideal design is to extend the passing lane to a point beyond the crest of the vertical curve. The VE team is terminating the lane at a crest vertical curve prior to the highpoint of the roadway.
TCL-9	Coordinate in future with urban design to prevent construction of items which will be obsolete.	Design Suggestion	Yes	This will be done.
TCL-14	Use MSE wall in lieu of poured in place GA Standard.	Proposed=\$41,221 Actual=\$37,947	Yes	This will be done.
TCL-15	Use modular block wall in lieu of poured in place GA Standard.	\$85,993	No	See above. Already implementing MSE wall for wall number one above.

TRUCK CLIMBING LANES (TCL) Continued				
TCL-16	Delete westbound Truck Climbing Lane.	\$737,311	No	According to AASHTO 2004, pg. 244, Criterion 3 is satisfied which justifies a Truck Climbing Lane (TCL). Also according to AASHTO, the addition of TCL can defer total roadway reconstruction for many years or indefinitely. The LOS / Delay with the TCL is "E" / 1.85 min. and "F" / 2.31 min. without the TCL.
TCL-17	Shorten the beginning of the eastbound Truck Climbing Lane.	\$38,704	No	Right of Way has already been purchased. The VE proposal would reduce the TCL length from 1.0 mile long to 0.9 mile long which is less than the optimum design of 1-2 miles for a flow rate of +700 pc/h. The project flow rate in 2031 is 1,850 pc/h.

A meeting was held on January 26, 2009 to discuss the above recommendations. DeWayne Comer, Joseph Ciavarrro, and Kerric Primus with District 6 Design and Ron Wishon and Douglas Fadool with Engineering Services were in attendance. Additional information was provided by the Project Manager on January 27 and February 3 and 13, 2009.

The results above reflect the consensus of those in attendance and those who provided input.

Approved: Gerald M. Ross Date: 2/19/09
Gerald M. Ross, P. E., Chief Engineer

REW/DMF

Attachments

STP00-0012-01(107) and CSSTP-0009-00(164), Cherokee County

P. I. Nos.: 632790 & 0009164

VE Study Implementation

Page 4.

c: Genetha Rice-Singleton
DeWayne Comer
David Moore
Joseph Ciavarro
Kerric Primus
Galen Barrow
James Magnus
Patrick Bowers
Kenny Beckworth
Ken Werho
Lisa Myers
General Files

PRECONSTRUCTION STATUS REPORT FOR PI:0009164,632790-

PROJ ID: 0009164
COUNTY: Chertock
LENGTH (MI): 1.17
PROJ NO.: CSSTP-0009-00(164)
PROJ MGR: Corner DuWayne
OFFICE: District 6
CONSUANT: GDOT
SPONSOR: GDOT
DESIGN FIRM:

SR 20 FROM I-575 TO CR 288/SCOTT ROAD
MPO: Atlanta TMA
TIP #: CH-020A3
MODEL YR: 2020
TYPE WORK: Widening
CONCEPT: Reconstruction/Rehabilitation
BOND PROJ.:

MGMT LET DATE: 12/15/2010
MGMT ROW DATE: 06/18/2009
SCHED LET DATE: 1/22/2014
WHO LETS?: GDOT Let
LET WITH:

DOT DIST: 6
CONG. DIST: 6
BIKE: N
MEASURE:
NEEDS SCORE:
BRIDGE SUFF:

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS				Status	Date Auth	
						Phase	Approved	Proposed	Cost			Fund
9/24/2009	10/22/2009	Concept Development			0	ROW	2009	2010	7,270,000.00	1,240	PREGST	
10/8/2009	10/22/2009	PM Submit Concept Report			0	CST	2009	2011	4,263,367.50	1,240	PREGST	
10/9/2009	10/22/2009	Receive Preconstruction Concept Approval			0							
10/22/2009	11/6/2009	Management Concept Approval Complete			0							
11/6/2009	7/28/2011	Public Information Open House Held			0							
10/23/2009	5/5/2011	Environmental Approval			0							
5/11/2011	12/31/2009	Pub Hear Held/Comm Resp (EA/FONSI, GEPA)			0							
12/11/2009	2/5/2010	Mapping			0							
1/4/2010	11/12/2010	Field Surveys/SDE			0							
2/8/2010	3/4/2010	Preliminary Plans			0							
3/9/2010	2/18/2010	Underground Storage Tanks			0							
3/3/2009	8/23/2011	.404 Permit Obtainment			0							
8/19/2011	1/13/2011	PHPK Inspection			0							
8/23/2011	1/13/2011	R/W Plans Preparation			0							
12/13/2011	9/30/2011	R/W Plans Final Approval			0							
9/28/2011	11/26/2013	L & D Approval			0							
1/16/2012	6/20/2012	R/W Acquisition			0							
6/7/2012	5/18/2011	Stake R/W			0							
5/17/2010	10/29/2012	Soil Surveys			0							
10/3/2011	11/21/2012	Final Design			0							
11/20/2012	12/18/2012	FFPR Inspection			0							
12/8/2012		Submit FFPR Responses (OFS)			0							

ROW Cost Est Amt: 6,800,000.00 **Date:** 7/1/2008
CST Cost Est Amt: 3,867,000.00 **Date:** 7/1/2008

Phase **Cost** **Fund**
 ROW 0.00 L240
 CST 0.00 L240

STIP AMOUNTS
Phase **Cost** **Fund**
 ROW 0.00 L240
 CST 0.00 L240

Design: JMC, mb
EIS: FA: Not at Dates/ GB
ICGPA: NOTIFICATION LETTER SENT TO CANTON & CHEROKEE 1-26-09
Programming: SPLIT FROM PI# 632790
ROW: This project was previously Site 1 of STP-012-(107) PI 632790

Precl Parcel CT: 59 **Total Parcel in ROW System:** 51
Under Review: 0 **Options - Pending:** 0
Released: 0 **Condemnations- Pend:** 0

Acquired by: N/R
Acquisition MGR:
R/W Cert Date:

DEFEND CT: 0

PRECONSTRUCTION STATUS REPORT FOR PI:0009164,632790-

PROJ ID: 632790- Cherukee
COUNTY: 6.08
LENGTH (MI): STP00-0012.01(107)
PROJ NO.: Corner, DeWayne
PROJ MGR: District 6
OFFICE: No Consultant, GDOT In-House Design
CONSULTANT: GDOT
SPONSOR:
DESIGN FIRM:

SR 20 EM UNION HILL ROAD TO GREENWOOD COURT - CLIMBING LANES
MIPO: Atlanta TMA
TIP #: CH-020A1
MODEL YR.: 2020
TYPE WORK: Passing Lanes
CONCEPT: Reconstruction/Rehabilitation
BOND PROJ.:

MGMT LET DATE: 08/21/2009
MGMT ROW DATE: 08/15/2005
SCHED LET DATE: 10/1/2005
WHO LETS?: GDOT Let
LET WITH:

DOT DIST: 6
CONG. DIST: 6
BIKE: N
MEASURE:
NEEDS SCORE: 9
BRIDGE SUFF:

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS						Fund	
						Phase	Approved	Proposed	Cost	Fund	Status		Date Auth
3/10/2009		Concept Development	6/14/1999	10/19/1999	100	PE	2000	2000	752,675.80	Q76	AUTHORIZED	7/30/1999	Q76
		Concept Meeting	6/25/1999	6/25/1999	100	ROW	2006	2006	10,911,000.00	L240	AUTHORIZED	7/18/2006	Q24
		PM Submit Concept Report	9/29/1999	9/29/1999	100	ROW	2009	2009	3,542,000.00	L240	PREST		
		Receive Preconstruction Concept Approval	8/18/1999	8/31/1999	100	ROW	2003	2003	150,000.00	Q24	AUTHORIZED	7/18/2006	
		Management Concept Approval Complete	9/14/1999	10/19/1999	100	CST	2010	2011	8,268,915.37	L240	PREST		
		Value Engineering Study	8/15/2008	5/19/2002	83	PE Cost Est Amt	752,675.80	Date	7/31/2008	Phase	Cost	0.00	1,240
		Public Information Open House Field	5/17/2002	12/13/2004	100	ROW Cost Est Amt	10,911,000.00	Date	7/31/2008	ROW	0.00	0.00	1,240
		Environmental Approval	4/19/2000	5/4/2000	100	ROW Cost Est Amt	3,542,000.00	Date	7/31/2008	ROW	0.00	0.00	1,240
		Mapping	1-4/2005	1/19/2005	100	ROW Cost Est Amt	7,143,000.00	Date	6/25/2008	ROW	0.00	0.00	1,240
		Field Surveys/SIDF	5/19/2002	6/2/2002	100	CST Cost Est Amt	7,143,000.00	Date	6/25/2008	CST	7,143,000.00	7,143,000.00	1,240
		Preliminary Plans	6/30/2001	12/8/2008	100								
		Underground Storage Tanks	8/22/2005	8/22/2005	0								
		404 Permit Obtainment	3/23/2002	6/11/2002	100								
		FPFR Inspection	9/7/2005	1/19/2006	100								
		R/W Plans Preparation	1/20/2006	1/21/2006	100								
		R/W Plans Final Approval	12/1/2005	12/31/2007	68								
		L & D Approval	9/17/2007	6/6/2001	100								
		R/W Acquisition	6/4/2001	12/2/2008	11								
		Stake R/W			0								
		Soil Survey			0								
		Final Design			0								
		FPFR Inspection			0								
		Submit FPFR Responses(CLS)			0								

PDD: [01R] 12-09-2000 AOE 6-16-00 SEPT99 BOARD ADD ASSIGNED DISTRICT 6 Must RW 05
 authorization 3/11/04
 RCT WALLS - SWW 1003-08 (FINAL PLANS SENT 9/08/08)
 JMC/Sp
Bridge: 101-08-091 NCLADVAC09-13-02 CE12-13-08 R6-30 06 OnSchedCST LC GB
Design: CHEROKEE SGN DO UTILITIES 10-26-99 RES TISSIN LELIER SENT 4-1-05
FGS: #1 9-02 R/W ADV ACO 3-03 #2 10-04 P/W 0099164 WAS SPLIT FM THIS PROJECT 7-08 #3 8-08 #4
LGPA: Programming: 11-08 #5 1-09
 46 1 09
ROW: PAeq-Later, Acq PM Brown, CC Hill, Only Sites 2 & 3, Site 1 is now 0099164
Traffic Op: CARS/M COMMENTS TO DIST 0617025- FPFR sent 8/9/05 szim
Utility: 2nd sub made 9-17-08, 3 of 7 to PM 12-2-08
EMG: 2033 (HRS(94)-W-V88)
Engr Services: Supp FPFR required, Speed Limit lowered to 35 mph
 11-08 #5 1-09

Dist/Comments:
 G O ROW Comment Site 1 being re-design ROW on Hold. Sites 2 & 3 involve total of 135 parcels-ROW active

Acquired by: D01
Acquisition MGR: Brown, Don (C)
R/W Cert Date:

DEEDS CT: 109

Cond. Filed: 19
Relocations: 16
Acquired: 128

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-0012-01(107) and
CSSTP-0009-00(164) in Cherokee County
PI No.: 632790 & 0009164
SR 20 Widening and Truck Climbing Lanes

OFFICE: Cartersville

DATE: December 18, 2008
Revision Date: January 30, 2009

FROM: Kent L. Sager, District Engineer

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

SUBJECT: VE Study Responses
SR 20 Roadway Widening, CSSTP-0009-00(164), PI 0009164; SR 20 Truck Climbing Lanes, STP00-0012-01(107), PI 632790 in Cherokee County

This project memorandum has been prepared as a response to the VE Study Recommendations for the referenced projects. For these projects, a VE Study was held on October 28-31, 2008. The VE Study Report of findings and recommendations was prepared and distributed by PBS&J's Value Management Team on November 14, 2008. This report was received by District 6 Road Design Office on November 18, 2008. A summary of the study recommendations with back up calculations were contained in this report. We have reviewed the comments and offer the following responses to these recommendations:

SR 20 Widening from I-575 to CR 288/Scott Rd. - CSSTP-0009-00(164), PI No. 0009164

Alternative No. RD-6

Recommendation: Use a single multi-use trail in lieu of bike lanes/sidewalk for a cost savings of \$410,633.

Response: The existence of the bike lane was planned in coordination with the city of Canton surrounding the new 'Canton Marketplace' shopping center which is being built on the south side of the project between stations 1000+00 and 1025+00. Sidewalks on both sides of the roadway and bike lanes are included as part of the developmental plan surrounding the new project. Furthermore, AASHTO generally recommends against using shared use paths adjacent to the roadway because of an increased crash rate with turning vehicles. For this reason, the State Bicycle & Pedestrian Coordinator is also in favor of maintaining the bike lane design.

Alternative No. RD-7

Recommendation: Use 5' sidewalks in lieu of 8' sidewalks for a cost savings of \$737,809.

Response: The original design inclusion of 8' sidewalks with 15' shoulders was part of the design coordination with the city of Canton on the 'Canton Marketplace' development. However, with further investigation, we have decided to use the alternative suggested and use 5' sidewalks in lieu of 8' sidewalks. With this change in sidewalk width we're able to have an approximate savings of \$141,835.

The additional \$595,974 savings suggested in the Alternative Recommendation was in commercial Right-of-Way which will not change do to the coordination with the developer and the City of Canton.

Alternative No. RD-11

Recommendation: Use MSE wall in lieu of poured in place GA STD 4948-B retaining wall for a cost savings of \$29,391.

Response: While the GDOT Department of Bridge Design is in agreement that the MSE wall would be more economical (approximate savings: \$30,000), the purpose of the wall through this stretch of the project is to prevent violation of a historical property on the north side of the project. Thus, the depth of the MSE wall would undermine that historical boundary. However, further inspection of the wall design by Bridge Design has shown that the correct wall standard to be used would be GA STD 4948-C instead of the shown 4948-B. The change in GA STD will have an approximate savings of \$39,600.

Alternative No. RD-12

Recommendation: Use modular block wall in lieu of poured in place GA STD 4948-B retaining wall for a cost savings of \$94,766.

Response: As was expressed in the response to Alternative RD-12, the wall type cannot be changed to a type with greater depth due to historical considerations. However, the original wall design is being reviewed after discussion with the Bridge Department to ensure proper design.

SR 20 Truck Climbing Lanes - STP00-0012-01(107), PI No. 632790 in Cherokee County

Alternative No. TCL-3

Recommendation: Use Bi-directional "passing lanes" in lieu of truck climbing lanes for a cost savings of \$508,462.

Response: According to the Highway Capacity Manual 2000, passing lanes on two-lane highways range in the lengths of 0.186 to 3.1 miles. The optimal lengths for passing lanes range from 0.5 to 2.0 miles depending on the traffic flow rate. The Directional Flow Rate along SR 20, projected at 1850 pc/h in 2031, is above the 700 pc/h for an optimal passing lane length of 1.0 to 2.0 miles long. The recommendation listed above suggest to construct passing lanes of 1,000-ft long with a 300-ft taper at the beginning and a 600-ft taper at the end at key locations in both directions. This alternative does not meet the optimal passing lane length according to the HCM 2000. Reference attached Appendix A (Highway Capacity Manual 2000: Chapter 12; pg 12_18)

Alternative No. TCL-4

Recommendation: Do not realign Water Tank Road for a cost savings of \$67,948.

Response: Looking into this issue. We are waiting on the depth of the valves in the area to be located.

Alternative No. TCL-5

Recommendation: Reduce side road improvements of Cotton Road and Old Orange Mill Road for a cost savings of \$59,073.

Response: The realignment of CR/195 Cotton Rd and CR/238 Old Orange Mill Rd are a result of a sight distance issue which has lowered the profile along SR20/Cumming Hwy. This lowering of the profile grade on SR 20 makes a need to realign the profiles of both intersections to coincide with the proposed profile grade along SR 20.

Alternative No. TCL-7

Recommendation: Terminate the east bound two-lane section at Sta. 3105+00 in lieu of Sta. 3120+00 for a cost savings of \$247,342.

Response: According to the AASHTO Green Book, the ideal design is to extend a climbing lane to a point beyond the crest (crest high point is at Sta. 3111+92.51), where a typical truck could attain a speed that is within 10 mph of the speed of the vehicles with a desirable speed of at least 40 mph. Additionally, shortening the length of the climbing lane will reduce the passing opportunities of other vehicles around slower truck traffic and substantially increase traffic platooning along this section of SR 20. Reference attached Appendix B (AASHTO Green Book 2004 Edition: Chapter 3 Elements of Design; pg 246)

Alternative No. TCL-9

Recommendation: Co-ordinate with future urban design to prevent construction of items which will be obsolete.

Response: The District office has communicated with the consultants of the future project to help them coordinated with our design.

Alternative No. TCL-14

Recommendation: Use MSE wall in lieu of poured in place GA Standard for a cost savings of \$41,221.

Response: The Office of Bridge Design has reviewed the VE Study and has recommended constructing a MSE wall for Wall 1 at Sta. 2087+00 to 2088+00 (SR 20) due the height of the wall. However, Bridge Design would not recommend constructing a MSE wall for Wall 2 at Sta. 71+75 to 72+75 (Beavers Rd) since the wall is only about 4 feet high and is proposed as a standard gravity wall. Reference attached Appendix C (Cost Worksheet for savings on Wall 1).

Alternative No. TCL-15

Recommendation: Use modular block wall in lieu of poured in place GA Standard for a cost savings of \$85,993.

Response: The Office of Bridge Design has reviewed the VE Study and has recommended constructing a MSE wall for Wall 1 at Sta. 2087+00 to 2088+00 (SR 20) due the height of the wall. However, Bridge Design would not recommend constructing a MSE wall for Wall 2 at Sta. 71+75 to 72+75 (Beavers Rd) since the wall is only about 4 feet high and is proposed as a standard gravity wall.

Alternative No. TCL-16

Recommendation: Delete West Bound Truck Passing Lane for a cost savings of \$737,311.

Response: With the current high traffic volume and the congestion of slower moving trucks along the existing SR 20 corridor, the need for relief justifies the truck climbing (passing) lanes to increase capacity and also improve safety. According to AASHTO, Criterion 3 is justified if the LOS of E or F exists along a two-lane highway. Reference attached Appendix D (LOS Report). Additionally, AASHTO states that on some two-lane highways, the addition of climbing lanes could defer reconstruction for many years or indefinitely. Climbing lanes could make a two-lane highway operate efficiently, whereas a much costly multilane highway would be needed.

Alternative No. TCL-17

Recommendation: Shorten the beginning of the East Bound Truck Passing Lane for a cost savings of \$160,533.

Response: Shortening the length of the climbing lane will reduce the passing opportunities of other vehicles around slower truck traffic and substantially increase traffic platooning along this section of SR 20. The optimal lengths for passing lanes range from 0.5 to 2.0 miles depending on the traffic flow rate. The Directional Flow Rate along SR 20 is above the 700 pc/h for an optimal passing lane length of 1.0 to 2.0 miles long. The recommendation listed above suggests shortening the passing lane to approximately 0.8 miles. This alternative does not meet the optimal passing lane length according to the HCM 2000. Additionally, the GAB-10" Inc. Mat'l on the Cost Worksheet has the original estimate at \$260,076. It should be $7,467 \text{ sy} \times \$20/\text{unit} = \$149,340$ for an above cost savings of \$38,704. Reference attached Appendix A (Highway Capacity Manual 2000: Chapter 12; pg 12_18)

