DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-2009-00(004)
Clayton & Fayette Counties
P.I. No.: 742870-
SR 920 from SR 54 to SR 3/US 19

OFFICE: Engineering Services

DATE: August 23, 2013

FROM: Lisa L. Myers, State Project Review Engineer

TO: Genetha Rice-Singleton, State Program Delivery Engineer
Attn.: Jeremy Busby

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The Value Engineering (VE) Study for the above project was held May 13-16, 2013. Responses were received on August 21, 2013. 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. Please note, if the implementation of a VE recommendation requires a Design Exception and/or Design Variance, the DE or DV must be requested separately.

ALT #	Description	Potential Savings/ LCC	Implement	Comments
B-1.0	Use short spans on pile bents in lieu of PSC beams on concrete bents at the Flint River bridge.	$455,365	No	The Office of Bridge Design concurs that there is insufficient information to agree with this recommendation at this time. Hydraulically, the shorter span lengths tend to catch more debris and cause more maintenance issues than the longer spans.
B-2.0	Use short spans on pile bents in lieu of PSC beams on concrete bents at the Hurricane Creek bridges.	$375,641	No	The Office of Bridge Design concurs that there is insufficient information to agree with this recommendation at this time. Hydraulically, the shorter span lengths tend to catch more debris and cause more maintenance issues than the longer spans.
B-4.0	Use smaller beams on end spans of Hurricane Creek bridges in lieu of consistent beam type throughout.	$28,431	No	The Office of Bridge Design concurs that there is insufficient information to agree with this recommendation at this time.
R-1.0	Revise intersection improvements at County Line Road/McElroy Road to reflect traffic shift to proposed East Fayetteville Bypass.	Proposed = $515,399 Actual = $338,294	Yes, with modifications	The current traffic projections will still require dual left turning lanes; however the required lengths of the turning lanes can be reduced for the revised savings re-calculated by the Design Team.

R-2.0	Use 10' wide Multi-use Trail on one side with a 5' wide sidewalk on opposite side in lieu of bike lanes and sidewalks on both sides.	Proposed = $1,315,291 Actual = $1,265,041	Yes, with modifications	The savings were reduced because the Design Team elected to modify this recommendation by using a 2' outside shoulder per the AASHTO Guide for the Development of Bicycle Facilities instead of the 1' wide alternative.
R-3.0	Lower the vertical profile in specific areas: STA. 616+00 to 635+00 and STA. 716+00 to 729+00.	Proposed = $191,703 Actual = $9,711	Yes, with modifications	Specifically, the profile can only be lowered a minimal amount from STA. 616+00 to 635+00 due to the 100 year flood elevation of 786.90 based on FEMA data. The cost savings at the next location would be negated by requiring additional reconstruction of the adjacent side roads, if the profile was lowered as suggested. Therefore, R-3.0 will be partially implemented for the revised savings.
R-5.0	Utilize existing ROW for pavement widening from STA. 550+00 to 600+00.	$774,389	No	The project was re-aligned in this area to avoid historic resources located on both sides of the road; Flintwood Farms on the North side and the Murphy Family Cemetery on the South side. The savings of this idea would be negated by the additional cost of updating the environmental studies, relocating the utilities, and the impacts to the historic Flintwood Farms property. This property is also suspect for Archaeological resources as identified on the eastern portion of the property along the road frontage. The current plan for the Bypass project also impacts this property which could be an accumulative environmental impact if this recommendation was implemented. In addition, this alternative would add difficulty to staging the construction since the existing pavement will be reconstructed.
R-6.0	Locate new pavement closer to existing horizontal alignment from STA. 605+00 to 625+00; construct the Flint River Bridge using stage construction.	$835,891	No	This recommendation would only have savings of ROW and would add cost and difficulty in construction with a staged bridge. The current alignment is located symmetrically between Archaeology resources on the North and South sides of the project. The utility costs for relocating the transmission poles would be evident whether or not this idea is implemented.

R-9.0	Reduce turn lane lengths on Panhandle Road.	$388,806	No	The Design Team confirmed that the design year traffic volumes warrant the turn lane lengths on Panhandle Road and the intersection would operate at capacity in the design year.
R-10.0	Reduce turn lane lengths on side roads.	Proposed = $552,895 Actual = $373,310	Yes, with modifications	The traffic volumes on the side roads have been re-evaluated using GODT's Driveway & Encroachment Control Manual and the turn lane lengths will be shortened where possible per the attached table.
R-12.0	For new pavement on side roads, use 11' lane widths in lieu of 12'.	$45,621	Yes	This will be done.
R-13.0	Eliminate retaining walls 2, 10, 11, 12, 13, 14, and use fill slopes and guardrail at these locations.	$252,907	No	Eliminating the retaining walls which are primarily located along residential properties to avoid excessive property impacts and/or displacements would require 2:1 fill slopes which are difficult to mow by property owners and the toe of fills would be pushed out to be in close proximity to the dwellings and other improvements.
R-14.0	Eliminate easements behind retaining walls and at the Hurricane Creek Bridges.	Proposed = $50,625 Actual = $19,800	Yes, with modifications	The easements behind the retaining wall will not be eliminated as the Department would need to obtain and retain access to the back sides of the retaining walls for maintenance purposes. The easements at STA. 706+00 RT and 710+00 LT along Hurricane Creek Bridges will be changed to reflect permanent easements and temporary easements. The permanent easements will be required for access to maintain the bridges while temporary easements would serve during the construction of the bridges and walls.
R-17.0	Eliminate sidewalks on side roads where none currently exist.	Proposed = $163,311 Actual = $106,187	Yes, with modifications	Some of the side roads listed do not have sidewalks, but should receive them in order to serve other modes of transportation to points of interest including: McCurry Park, Kemp Primary School and would provide connectivity to existing sidewalks between neighborhoods and mixed use properties as well as to Lovejoy High School. Therefore, this idea will be partially implemented.

R-21.0	Limit improvements at intersection with SR 54 to North of SR 920 plus raised median nose to South.	Proposed = $106,232 Actual = $89,947	Yes, with modifications	The pavement milling overlay and restriping is proposed south of SR 54 with SR 920 intersection as it is typically recommended by GDOT to do so within the project limits on roadways that are not being reconstructed. Therefore, this idea will be partially implemented.
R-25.0	Set ROW limits at shoulder break and use permanent easements as necessary beyond the ROW limit.	$217,500	No	This will not be pursued because the Chief Engineer and the Right of Way Administrator prefer to initially delineate the necessary areas for construction as required ROW since the costs associated with permanent easement will be negotiated on a case by case basis.
R-28.0	Use cast-in-place concrete wall in lieu of MSE wall for Hurricane Creek Bridge walls #4 & #7.	$137,114	No	The proposed MSE wall is extremely close to the existing pavement and bridge where traffic will be maintained so constructability is an issue. The MSE wall has a much smaller foundation (leveling pad) as opposed to a parapet wall which has a significant footing that actually would extend under the existing pavement where traffic is maintained. The traffic cannot be shifted because the location of the wall and its relationship to the existing bridge. A portion of the MSE wall near the existing bridge most likely will require the use of sheet piling.
R-29.0	Reduce permanent easement at STA. 762+00 LT to eliminate displacement.	$100,375	Yes	This will be done.

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

Approved: _____ **Date:** 9/20/13

Russell McMurry, PE, Chief Engineer

Approved: Melinda M Rol **Date:** 10/9/13
for **Rodney Barry, PE, FHWA Division Administrator**

LLM/RLR/MJS
Attachments

c: Melinda Roberson/Alvin Gutierrez/Carlos Figueroa - FHWA
Joe Carpenter/Paul Liles
Genetha Rice-Singleton/Hiral Patel/Jeremy Busby
Marc Mastronardi
Ben Rabun/Bill Duvall
Bobby Dollar
Shun Pringle/Andy Lindsey/William Dunwoody
Ken Werho
Robert Reid Jr/Matt Sanders

Sanders, Matt

Subject: FW: VE Responses PI#742870-

From: Carpenter, Joe
Sent: Friday, August 23, 2013 7:35 AM
To: Sanders, Matt
Subject: RE: VE Responses PI#742870-

Matt,

I concur with the responses – please proceed with approval and distribution. Thanks.

K. Joe Carpenter, Jr., P.E.
Director of Engineering
Georgia Department of Transportation
600 West Peachtree Street, N.W. – 25th Floor
Atlanta, GA 30308
Direct: 404-631-1519
Cell: 404-354-1056

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE CSSTP-0007-00(692), Cobb/Paulding County, P.I. No. 0007692 PI#742870 SR92 from SR120 to CR473/Cedarcrest Road

OFFICE Program Delivery

DATE 8/13/13

FROM Genetha Rice-Singleton, State Program Delivery Engineer

TO Lisa Myers, State Project Review Engineer

SUBJECT Value Engineering Responses

The Office of Program Delivery submits the attached responses to the Value Engineering Report dated May 16, 2013. American Engineers is the Engineer of Record.

If there are any questions please contact Jeremy Busby at 404-631-1154.

GRS:AVS:JTB

Attachments

AEI

AMERICAN ENGINEERS, INC.
PROFESSIONAL ENGINEERING

1634 White Circle,
Suite 101
Marietta, GA 30066
Office (770) 421- 8422
Fax (770) 421- 0064

July 3, 2013

Jeremy Busby, PE
Project Manager
Office of Program Delivery
600 West Peachtree Street
25th Floor
Atlanta, GA 30308

Regarding: Value Engineering Study Responses
Project No. STP00-2009-00(004), PI No. 742870
Fayette/Clayton Counties

Dear Jeremy:

American Engineers, Inc. (AEI) is please to submit the attached Value Engineering Study Responses for the above referenced project. We have provided responses in accordance with the guidelines provided by Engineering Services and other information provided by the Office of Bridge Design.

If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

American Engineers, Inc. (AEI)

Mark Wilkinson

Mark Wilkinson, PE
Project Manager

Value Engineering Study Responses

1) Recommendation B-1.0: Use Short Spans on Pile Bents in lieu of PSC beams on Concrete Bents at the Flint River Bridge

VE Team Savings: $455,365

No, we will not implement the recommendation because the plans are conceptual at this time and therefore there is insufficient information to agree with the recommendation. Hydraulically, the shorter span lengths place the bents closer together which tend to catch more debris and cause more flow blockages and maintenance issues than the longer spans do.

2) Recommendation B-2.0: Use Short Spans on Pile Bents in lieu of PSC beams on Concrete Bents at the Hurricane Creek Bridge

VE Team Savings: $375,641

No, we will not implement the recommendation because the plans are conceptual at this time and therefore there is insufficient information to agree with the recommendation. Hydraulically, the shorter span lengths place the bents closer together which tend to catch more debris and cause more flow blockages and maintenance issues than the longer spans do.

3) Recommendation B-4.0: Use Smaller Beams on End Spans of Hurricane Creek Bridge in lieu of Consistent Beam Type

VE Team Savings: $28,431

No, we will not implement the recommendation because the plans are conceptual at this time and therefore there is insufficient information to agree with the recommendation.

4) Recommendation R-1.0: Revise Intersection Improvements at County Line Road/ McElroy Road to reflect Traffic Shift to Proposed East Fayetteville Bypass

VE Team Savings: $515,399

Yes, we will implement the recommendation with modifications and there will be a reduced savings. Based on engineering judgment and the volume of traffic on County Line Road/Mc Elroy Road, approximately 25% of the traffic would be shifted to the future East Fayetteville Bypass. With this assumed shift in traffic, the dual left turn lanes will still be required; however, the required lengths

would be reduced. The County Line/McElroy Road NB dual left lanes would be decrease from 740 feet to 400 feet and the SB dual left lane lengths would be reduced from 960 feet to 400 feet. The right turn lane lengths would also be reduced. The NB right turn lane length would be reduced from 960 feet to 200 feet and the SB right turn lane length would be reduced from 560 feet to 400 feet.

Revised Savings: $338,294

5) Recommendation R-2.0: Use 10' Wide Multi-use Trail on One Side with 5' Wide Sidewalk on Opposite Side in lieu of Bike Lanes and Sidewalks

VE Team Savings: $1,315,291

Yes, we will implement the recommendation with modifications and reduced savings. The recommendation's typical section shows a 1' outside shoulder; however, the 2012 AASHTO Guide for the Development of Bicycle Facilities states that "At a minimum, a 2 ft (0.6 m) graded area with a maximum 1V:6H slope should be provided for clearance from lateral obstructions such as bushes, large rocks, bridge piers, abutments, and poles." Using a 2 ft outside shoulder per the AASHTO guideline will shift the required right-of-way line out an additional foot, thus decreasing the cost savings. An additional reduction in the cost savings will occur by implementing this recommendation as the 4' bicycle lanes were being used for maintenance of traffic especially in areas where the there are grade changes and/or the proposed and existing edge of pavements are near one another. However, the project has not progressed far enough along to identify the specific areas where this will occur; therefore, the actual reduction in cost savings cannot be calculated at this time.

Revised Savings: $1,265,041

6) Recommendation R-3.0: Lower Vertical Profile in Specific Areas

VE Team Savings: $191,703

Yes, we will partially implement the recommendation with modifications and reduced savings. As the project design progresses from conceptual design to preliminary design, the profile will be modified in these areas to minimize the earthwork and the footprint of the roadway embankment thus reducing the area of permanent easements. Specifically, the profile can only be lowered a very minimal amount from STA. 616+00 to 635+00 due to the 100 year flood elevation of 786.90 based on FEMA data. For STA. 716+00 to STA. 729+00, the cost savings would be negated by the cost of reconstructing additional lengths of the side roads of Southwood, The Word of God Christian Church Drive, Pebble Ridge Drive and the cross road of Pebble Ridge Lane as well as added costs for right-of-way and easements and staging of construction/on-site detours. Lowering the mainline profile at Southwood Drive and Pebble Ridge Drive would put these side roads into a more severe cut situation and require a displacement at STA. 258+00 LT Southwood Drive and a displacement at STA. 271+50 due to the cut slopes infringing on

the house foundations . These displacements alone would negate the cost savings in lowering the mainline profile between STA. 716+00 and 729+00.

Revised Savings: $9,711

7) Recommendation R-5.0: Utilize Existing Right-of-Way for Pavement Widening from Sta. 550+00 to 600+00

VE Team Savings: $774,389

No, we will not implement the recommendation. The project was realigned in this area to avoid the historic resources located on both sides of the road, namely Flintwood Farms on the north side and the Murphy Family Cemetery on the south side. The savings of this recommendation would be negated by the additional cost of updating the environmental studies, the cost of relocating the utilities and the environmental impacts to the historic Flintwood Farms property. The Flintwood Farms property is suspect for Archaeological Resources as some resources have already been identified on the eastern portion of the property along the road frontage. In addition, this recommendation would add difficulty to and thus cost for staging the construction of the project as the existing pavement is slated for reconstruction and there would be multiple crossovers due to the meandering affect the alignment would have in minimizing impacts to the historic properties. The current plans for the East Fayetteville Bypass project also impact the Flintwood Farms property; therefore, there could be an accumulative environmental impact on this property if this recommendation is implemented.

8) Recommendation R-6.0: Locate New Pavement Closer to Existing Horizontal Alignment from Sta. 605+00 to 625+00; Construct Flint River Bridge using Stage Construction.

VE Team Savings: $835,891

No, we will not implement this recommendation. This recommendation would only have savings of right-of-way and would add cost and difficulty in construction with a staged bridge. The alignment is located symmetrically between Archaeology resources on the north and south sides of the project. The utility costs for relocating the power transmission poles would be evident whether or not the recommendation is implemented.

9) Recommendation R-9.0: Reduce Turn Lane Lengths on Panhandle Road

VE Team Savings: ~~$418,806~~ $388,806

No, we will not implement this recommendation. The design year traffic volumes warrant the turn lane lengths on Panhandle Road and the intersection would operate at capacity in the design year.

10) Recommendation R-10.0: Reduce Turn Lane Lengths on Side Roads

VE Team Savings: $552,895

Yes, we will implement the recommendation with modifications and reduced cost savings. The traffic volumes on the side roads have been re-evaluated using GDOT's Driveway and Encroachment Control Manual guidelines and turn lane lengths will be shortened where possible per the attached table.

Revised Savings: $373,310

11) Recommendation R-12.0: For New Pavement Sections on Side Streets, use 11' Lane Widths in lieu of 12'

VE Team Savings: $45,621

Yes, we will implement the recommendation.

12) Recommendation R-13.0: Eliminate Retaining Walls 2, 10, 11, 12, 13, 14 and Use Fill Slopes and Guardrail at These Locations

VE Team Savings: $252,907

No, we will not implement the recommendation. Eliminating the retaining walls which are primarily located along residential properties to avoid excessive property impacts and/or displacements would require 2:1 fill slopes which are not mowable by property owners and the toe of fills would be in close proximity to dwellings and other improvements.

13) Recommendation R-14.0: Eliminate Easements behind Retaining Walls and at Hurricane Creek Bridge

VE Team Savings: $50,625

Yes, we will partially implement the recommendation and there will be a reduced savings. The easements behind the retaining wall will not be eliminated as the Department would need to obtain and retain access to the back sides of the retaining walls for maintenance purposes. The easements at STA. 706+00 RT and 710+00 LT along Hurricane Creek Bridges will be changed to reflect permanent easements and temporary easements. The permanent easements are required for access for bridge maintenance while the temporary easements would serve as temporary construction easement for constructing the bridges and walls.

Revised Savings: $19,800

14) Recommendation R-17.0: Eliminate Sidewalks on Side Roads Where None Currently Exist

VE Team Savings: $163,311

Yes, we will implement the recommendation with modifications and reduced cost savings. Some of the side roads listed do not have sidewalks, but should receive sidewalks as they would serve other modes of transportation to points of interest including McCurry Park, Kemp Primary School and would provide connectivity of existing sidewalks between neighborhoods and mixed use properties as well as connectivity between neighborhoods and Lovejoy High School. A Design Variance will be required for those side roads proposed to have an urban section without sidewalks which would include Zoie Court, Shannon Circle, County Farm Road, Volunteer Way, McElroy Road, Felton Drive, Kellens Court, Tara Road, New Hope Road, London Way, Knotty Pine Road and Home Depot drive. There is an additional reduction in cost savings due to having to prepare and process the Design Variance; however the actual reduction in savings for this effort is unknown at this time.

Revised Savings: $106,187

15) Recommendation R-21.0: Limit Improvements at Intersection with SR 54 to North of SR 920 Plus Raised Median Nose to South

VE Team Savings: $106,232

Yes, we will implement the recommendation with modifications and reduced cost savings. The project limits south of the intersection of SR 54 and SR 920 would extend to approximately the centerline of the existing one-way driveway of the CITGO Gas Station. The improvements will include milling and overlay and pavement restriping as well as converting the driveway to a right-in/right out driveway since the existing driveway with direct access to SR 920/McDonough Road will be closed as it is too close to the intersection and would create operational issues if replaced. The proposed driveway improvement, although it does not increase capacity for the project, is being proposed due to the need to close the driveway on SR 920/McDonough Road. The pavement milling, overlay and restriping is proposed south of the SR 54 with SR 920 intersection as it is typically recommended by GDOT District Offices to do so within the project limits on roadways that are not being reconstructed. Curb and gutter is proposed on the east side of SR 54 to eliminate the short gap between the proposed C&G sections at the driveway and SR 920 improvements as well as provide a barricade effect to the old SR 920 roadbed. The raised island on SR 54 south of SR 920 is required to be extended from the existing nose location and a U-turn "eye brow" on the west side of SR 54 will be required.

Revised Savings: $89,947

16) Recommendation R-25.0: Set Right-of-Way Limits at Shoulder Break and Use Permanent Easements as Necessary Beyond the Right-of-Way Limit

VE Team Savings: $217,500

Yes, we will implement the recommendation.

NOTE: THIS HAS BEEN CHANGED TO A "NO" FOR THE REASONS STATED IN THE IMPLEMENTATION LETTER AND IN PHIL'S EMAIL (SEE ATTACHED).

17) Recommendation R-28.0: Use Cast-in-Place Concrete Wall in lieu of MSE wall for Hurricane Creek Bridge Walls #4 and 7

VE Team Savings: $137,114

No, we will not implement the recommendation. This recommendation is not constructible as the proposed MSE wall is extremely close to the existing pavement and bridge where traffic will be maintained. The proposed MSE wall has a much smaller foundation (leveling pad) as opposed to a parapet wall which has a significant footing that actually would extend under the existing pavement where traffic is being maintained. The traffic cannot be shifted because of the location of the MSE wall in relationship to the existing bridge. A portion of the MSE wall near the existing bridge most likely will require the use of sheet piling.

18) Recommendation R-29.0: Reduce Permanent Easement at 762+00 LT to Eliminate Displacement

VE Team Savings: $100,375

Yes, we will implement the recommendation.

ALTERNATIVE
R-25.0

From: Copeland, Howard (Phil)
Sent: Thursday, September 19, 2013 5:05 PM
To: Sanders, Matt
Cc: Reid, Robert Lee Jr.; Myers, Lisa; Busby, Jeremy T.; Byers, Troy; Brock, Wesley
Subject: RE: PI No. 742870- Clayton/Fayette SR 920

Matt,

I concur with the conclusion NOT to change a portion of the required row to Permanent Easement on this project.

I also think it should not be an across the board, project wide recommendation. However, if there are case by case incidents in which nominal activity is occurring and no utility relocation is required it COULD be considered on a case by case recommendation.

Howard P. Copeland
Georgia Department of Transportation
Right of Way Administrator
Office of Right of Way
600 West Peachtree Street
Room 1433
Atlanta, Georgia 30308
404-347-0227

Sanders, Matt

From: DuVall, Bill
Sent: Monday, August 12, 2013 3:03 PM
To: Busby, Jeremy T.
Cc: Rabun, Ben; Sanders, Matt
Subject: FW: 742870 VE Responses
Attachments: 742870_R28.pdf

Jeremy,

The responses developed by the consultant regarding the bridges appear reasonable. There are other response regarding the proposed walls and I agree with them.

Although I agree to not implement R28, I feel there is an error in the estimate. The VE team included MSE backfill which is typically used behind the endwall of bridges and not necessarily the MSE backfill. The cost of the MSE walls include the backfill cost. In addition, the VE team assumed a parapet wall (P3 Wall) but the appropriate concrete option would be a GA Standard 4948 B modified for a Type 2D. The Type 2D has a cost of 760 $/LF. I've attached my estimate as documentation.

If you need anything else please let me know.

Thanks,
Bill

Bill DuVall, PE, MSCE
Assistant State Bridge Engineer
Georgia DOT, Office of Bridge Design
(404) 631-1883 work
(404) 895-4943 mobile

From: Busby, Jeremy T.
Sent: Monday, August 12, 2013 1:37 PM
To: DuVall, Bill
Subject: 742870 VE Responses

Bill,
As requested, for your review, are the proposed VE responses. Let me know if the bridge responses are acceptable.

Jeremy T. Busby, PE
Project Manager
Office of Program Delivery
600 West Peachtree Street, 25th Floor
Atlanta, GA 30308
Office|404-631-1154
Mobile|404-309-1269
Fax|404-631-1558
jbusby@dot.ga.gov

VALUE ENGINEERING REVISED COST SAVINGS

COST ESTIMATING WORKSHEET		
PROPOSAL NUMBER:	R-1.0	
PROJECT #/PI #:	STP00-2009-00(004) / 742870-	

ORIGINAL DESIGN					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Full Depth Pavement	1.7	SY	13,355	49.42	660,004
Conc Curb & Gutter, TP2	1	LF	4972	9.93	49,372
Conc Sidewalk, 4 in	1	SY	2762	19.15	52,892
Residential Right-of-Way	1	AC	0.76	75,000	57,000
Residential Permanent Easement	1	AC	0.5	37,500	18,750
			SUBTOTAL - COST TO PRIME		838,018
			MARKUP		Incl.
			TOTAL CONTRACT COST		**838,018**

PROPOSED CHANGE					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Full Depth Pavement	1.7	SY	4,656	49.42	230,100
Conc Curb & Gutter, TP2	1	LF	2420	9.93	24,031
Conc Sidewalk, 4 in	1	SY	1344	19.15	25,738
Residential Right-of-Way	1	AC	0.42	75,000	31,500
Residential Permanent Easement	1	AC	0.3	37,500	11,250
			SUBTOTAL - COST TO PRIME		322,619
			MARKUP		Incl.
			TOTAL CONTRACT COST		**322,619**

Difference [Original-Proposed] **$515,399**

MODIFIED RECOMMENDATION (Calcs from DGN Files)					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Full Depth Pavement	1.7	SY	7,660	49.42	378,557
Conc Curb & Gutter, TP2	1	LF	1260	9.93	12,512
Conc Sidewalk, 4 in	1	SY	700	19.15	13,405
Residential Right-of-Way	1	AC	0.86	75,000	64,500
Residential Permanent Easement	1	AC	0.82	37,500	30,750
			SUBTOTAL - COST TO PRIME		499,724
			MARKUP		Incl.
			TOTAL CONTRACT COST		**499,724**

REVISED SAVINGS Difference [Original-Modified Recommend.] **$338,294**

Sources 1. Project Cost Estimate 3. GDOT Item Mean Summary 5. Richardson's stimating Manual
2. USC Estimate Database 4. Means Estimating Manual 6. Vendor (Specify) 7. Other (Specify)

VALUE ENGINEERING REVISED COST SAVINGS

COST ESTIMATING WORKSHEET		
PROPOSAL NUMBER:	R-2.0	
PROJECT #/PI #:	STP00-2009-00(004) / 742870-	

ORIGINAL DESIGN					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
FULL DEPTH PAVEMENT	1	SY	25,453	49.42	1,257,904
BRIDGE	1	SF	1695	95	161,025
RIGHT-OF-WAY, RESIDENTIAL	1	AC	2.68	75000	201,000
SUBTOTAL - COST TO PRIME					1,619,929
MARKUP					Incl.
TOTAL CONTRACT COST					**1,619,929**

PROPOSED CHANGE					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
CONC SIDEWALK, 4 IN	1	SY	15,908	19.15	304,638
SUBTOTAL - COST TO PRIME					304,638
MARKUP					Incl.
TOTAL CONTRACT COST					**304,638**

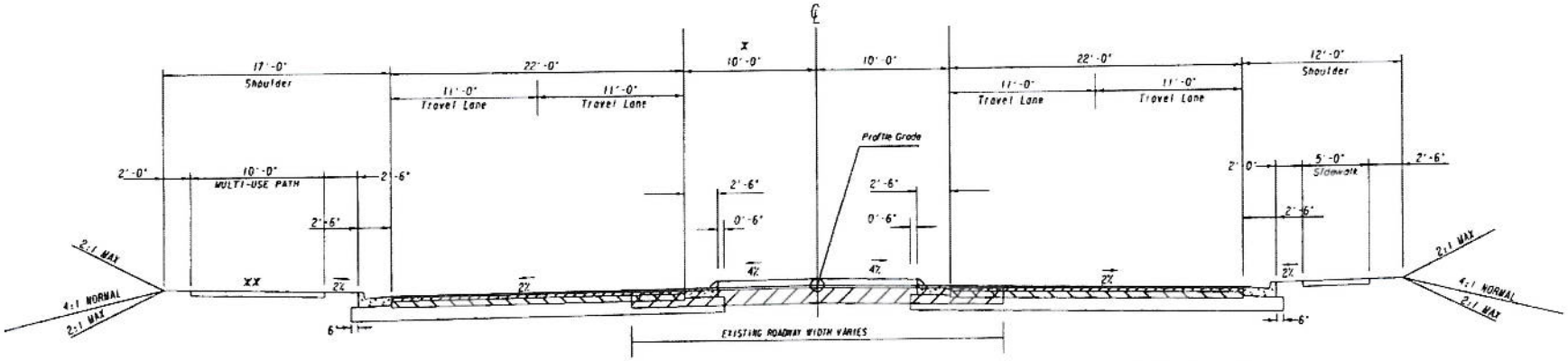
Difference [Original-Proposed] **$1,315,291**

MODIFIED RECOMMENDATION (Calcs from DGN Files)					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
CONC SIDEWALK, 4 IN	1	SY	15,908	19.15	304,638
RIGHT-OF-WAY, RESIDENTIAL	1	AC	0.67	75,000	50,250
					0
					0
					0
					0
SUBTOTAL - COST TO PRIME					354,888
MARKUP					Incl.
TOTAL CONTRACT COST					**354,888**

REVISED SAVINGS Difference [Original-Modified Recommend.] **$1,265,041**

Sources 1. Project Cost Estimate 3. GDOT Item Mean Summary 5. Richardson's stimating Manual
2. USC Estimate Database 4. Means Estimating Manual 6. Vendor (Specify) 7. Other (Specify)

*NOTE: VARIES FROM 10'0" TO 20'0"
STA. 744+63.00 TO 762+75.64



R-2.0 : REVISED TYPICAL FOR MULTI-USE PATH

xx NOTE: MULTI-USE PATH ON NORTH SIDE OF SR 920/McDONOUGH ROAD FROM SR 54 TO PANHANDLE ROAD AND ON THE SOUTH SIDE OF SR 920/McDONOUGH ROAD FROM PANHANDLE ROAD TO CLAYTON COUNTY PARK ENTRANCE EAST

VALUE ENGINEERING REVISED COST SAVINGS

COST ESTIMATING WORKSHEET		
PROPOSAL NUMBER:	R-3.0	
PROJECT #/PI #:	STP00-2009-00(004) / 742870-	

ORIGINAL DESIGN					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Sta 616+00 to Sta 635+00:					
Borrow Excavation, Incl Material	1	CY	33778	3.08	104,036
Residential Permanent Easement	1	AC	0.71	37,500	26,687
Sta 716+00 to Sta 729+00:					
Borrow Excavation, Incl Material	1	CY	13867	3.08	42,710
Residential Permanent Easement	1	AC	0.48	37500	18000
			SUBTOTAL - COST TO PRIME		191,703
			MARKUP		Incl.
			TOTAL CONTRACT COST		**191,703**

PROPOSED CHANGE					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Sta 616+00 to Sta 635+00:					
Borrow Excavation, Incl Material	1	CY	0	3.08	0
Residential Permanent Easement	1	AC	0	37,500	0
Sta 716+00 to Sta 729+00:					
Borrow Excavation, Incl Material	1	CY	0	3.08	0
Residential Permanent Easement	1	AC	0	37500	0
			SUBTOTAL - COST TO PRIME		0
			MARKUP		Incl.
			TOTAL CONTRACT COST		**0**

Difference [Original-Proposed] **$191,703**

MODIFIED RECOMMENDATION (Calcs from DGN Files)					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Sta 616+00 to Sta 635+00:					
Borrow Excavation, Incl Material	1	CY	3153	3.08	9,711
Residential Permanent Easement	1	AC	0	37,500	0
Sta 716+00 to Sta 729+00:					
Borrow Excavation, Incl Material	1	CY	0	3.08	0
Residential Permanent Easement	1	AC	0	37500	0
			SUBTOTAL - COST TO PRIME		9,711
			MARKUP		Incl.
			TOTAL CONTRACT COST		**9,711**

REVISED SAVINGS Difference [Original-Modified Recommend.] **$9,711**

Sources 1. Project Cost Estimate 3. GDOT Item Mean Summary 5. Richardson's stimating Manual
2. USC Estimate Database 4. Means Estimating Manual 6. Vendor (Specify) 7. Other (Specify)

VALUE ENGINEERING REVISED COST SAVINGS

COST ESTIMATING WORKSHEET		
PROPOSAL NUMBER:	**R-10.0**	
PROJECT #/PI #:	**STP00-2009-00(004) / 742870-**	

ORIGINAL DESIGN					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Easement, Residential (Reduction)	1.00	AC	0.87	37500	32,620
Curb & Gutter TP 2 (Reduction)	1.00	LF	3070	9.93	30,480
Sidewalk (Reduction)	1.00	SY	1928	19.15	36,920
Asphalt Overlay (Reduction)	1.00	SY	4519	5.6	25,305
Asphalt Full Depth (Reduction)	1.00	SY	3998	49.42	197,570
Right of way, Res. (Reduction)	1.00	AC	0.4	75000	30000
Displacement, Res. (Reduction)	1.00	EA	2	100000	200,000
				SUBTOTAL - COST TO PRIME	552,895
				MARKUP	Incl.
				TOTAL CONTRACT COST	**552,895**

PROPOSED CHANGE					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
				SUBTOTAL - COST TO PRIME	0
				MARKUP	Incl.
				TOTAL CONTRACT COST	**0**

Difference [Original-Proposed] **$552,895**

MODIFIED RECOMMENDATION (Calcs from DGN Files)					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Easement, Residential (Reduction)	1.00	AC	0.71	37500	26,625
Curb & Gutter TP 2 (Reduction)	1.00	LF	2870	9.93	28,499
Sidewalk (Reduction)	1.00	SY	1598	19.15	30,602
Asphalt Overlay (Reduction)	1.00	SY	8274	5.6	46,334
Asphalt Full Depth (Reduction)	1.00	SY	0	49.42	0
Right of way, Res. (Reduction)	1.00	AC	0.55	75000	41,250
Displacement, Res. (Reduction)	1.00	EA	2	100000	200,000
				MARKUP	Incl.
				TOTAL CONTRACT COST	**373,310**

REVISED SAVINGS Difference [Original-Modified Recommend.] **$373,310**

Sources 1. Project Cost Estimate 3. GDOT Item Mean Summary 5. Richardson's stimating Manual
2. USC Estimate Database 4. Means Estimating Manual 6. Vendor (Specify) 7. Other (Specify)

R-10.0: Turn Lane Lengths on Side Streets along SR-920/McDonough Road									
Side Rd	Current Design			VE Proposed			Revised Design		
	LT Length	RT Length	Taper	LT Length	RT Length	Taper	LT length	RT length	Taper
Zoie Ct		270	100		100	50		200	50
Turner Rd	250		100	100		50	100		50
New Hope Rd	320		100	200		50	200		50
Folsom Rd	600 (@2)	550	100	200 (@2)	200	100	200 (@2)	200	100
Southwood Dr		330	100		100	50		150	50
Pebble Ridge Dr		375	100		200	50		200	50
Knotty Pine Place		330	100		100	50		150	50
Shannon Cir		360	100		100	50		200	50
Home Depot Dr		400	100		250	50		400	50
County Line / Mcelroy (NB)	740 (@2)	960	100	235 (@2)	175	100	400 (@2)	200	100
County Line / Mcelroy (SB)	960 (@2)	560	100	235 (@2)	175	100	400 (@2)	400	100

R-10.0 Calculations: Difference bet. Original and Revised Lane Lengths							
Side Rd	PVMT (SF)	Asph Overlay (SF)	C&G (LF)	S/W (SY)	R/W (ac)	Pem Esmt (ac)	Displacement
Zoie Ct	0	3684	240	134	0.014	0.021	
Turner Rd	0	9059	0	0	0.316	0.108	
New Hope Rd	0	8772	340	189	0.072	0	
Folsom Rd	0	21460	400	223	0.028	0.129	
Southwood Dr	0	6977	460	256	0.04	0.126	2
Pebble Ridge Dr	0	6791	450	250	0.028	0.103	
Knotty Pine Place	0	6238	460	256	0.031	0.123	
Shannon Cir	0	9771	420	234	0.023	0.104	
Home Depot Dr	0	1718	100	56	0	0	
County Line / Mcelroy (NB)	See R-1.0	0	0	0	0	0	
County Line / Mcelroy (SB)	See R-1.0	0	0	0	0	0	
Totals:	0	74470	**2870**	**1598**	**0.552**	**0.714**	**2**

VALUE ENGINEERING REVISED COST SAVINGS

COST ESTIMATING WORKSHEET		
PROPOSAL NUMBER:	R-14.0	
PROJECT #/PI #:	STP00-2009-00(004) / 742870-	

ORIGINAL DESIGN					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Easement (reduction)	1/7	AC	1.35	37500	50,625
SUBTOTAL - COST TO PRIME					50,625
MARKUP					Incl.
TOTAL CONTRACT COST					**50,625**

PROPOSED CHANGE					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
SUBTOTAL - COST TO PRIME					0
MARKUP					Incl.
TOTAL CONTRACT COST					**0**

Difference [Original-Proposed] **$50,625**

MODIFIED RECOMMENDATION (Calcs from DGN Files)					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Change Perm Esmt to Temp Esmt	1/7	AC	0.66	30000	19,800
Assume difference between Perm.					
and Temp. Esmt is $30,000/ac					
SUBTOTAL - COST TO PRIME					19,800
MARKUP					Incl.
TOTAL CONTRACT COST					**19,800**

REVISED SAVINGS Difference [Original-Modified Recommend.] **$19,800**

Sources 1. Project Cost Estimate 3. GDOT Item Mean Summary 5. Richardson's stimating Manual
2. USC Estimate Database 4. Means Estimating Manual 6. Vendor (Specify) 7. Other (Specify)

VALUE ENGINEERING REVISED COST SAVINGS

COST ESTIMATING WORKSHEET		
PROPOSAL NUMBER:	R-17.0	
PROJECT #/PI #:	STP00-2009-00(004) / 742870-	

ORIGINAL DESIGN					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
4" Sidewalk (reduction)	1/7	SY	8528	19.15	163,311
SUBTOTAL - COST TO PRIME					163,311
MARKUP					Incl.
TOTAL CONTRACT COST					**163,311**

PROPOSED CHANGE					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
SUBTOTAL - COST TO PRIME					0
MARKUP					Incl.
TOTAL CONTRACT COST					**0**

Difference [Original-Proposed] **$163,311**

MODIFIED RECOMMENDATION (Calcs fron DGN Files)					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
4" Sidewalk (reduction)	1/7	SY	5545	19.15	106,187
SUBTOTAL - COST TO PRIME					106,187
MARKUP					Incl.
TOTAL CONTRACT COST					**106,187**

REVISED SAVINGS Difference [Original-Modified Recommend.] **$106,187**

Sources 1. Project Cost Estimate 3. GDOT Item Mean Summary 5. Richardson's stimating Manual
2. USC Estimate Database 4. Means Estimating Manual 6. Vendor (Specify) 7. Other (Specify)

VALUE ENGINEERING REVISED COST SAVINGS

COST ESTIMATING WORKSHEET		
PROPOSAL NUMBER:	R-21.0	
PROJECT #/PI #:	STP00-2009-00(004) / 742870-	

ORIGINAL DESIGN					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
EASEMENT, COMMERCIAL	1	AC	0.39	125000	48,750
CURB & GUTTER TP 2	1	LF	732	9.93	7,269
SIDEWALK	1	SY	444	19.15	8,503
ASPHALT OVERLAY	1	SY	5216	5.6	29,210
GUARDRAIL W BEAM	1	LF	550	13.97	7,684
TP 1 GUARDRAIL ANCHOR	1	EA	2	609.4	1,219
TP 12 GUARDRAIL ANCHOR	1	EA	2	1799.32	3,599
			SUBTOTAL - COST TO PRIME		106,232
			MARKUP		Incl.
			TOTAL CONTRACT COST		**106,232**

PROPOSED CHANGE					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
			SUBTOTAL - COST TO PRIME		0
			MARKUP		Incl.
			TOTAL CONTRACT COST		0

Difference [Original-Proposed] **$106,232**

MODIFIED RECOMMENDATION (Calcs from DGN Files)					
ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
EASEMENT, COMMERCIAL	1	AC	0.39	125000	48,750
CURB & GUTTER TP 2	1	LF	732	9.93	7,269
SIDEWALK	1	SY	444	19.15	8,503
ASPHALT OVERLAY	1	SY	2308	5.6	12,925
GUARDRAIL W BEAM	1	LF	550	13.97	7,684
TP 1 GUARDRAIL ANCHOR	1	EA	2	609.4	1,219
TP 12 GUARDRAIL ANCHOR	1	EA	2	1799.32	3,599
			MARKUP		Incl.
			TOTAL CONTRACT COST		**89,947**

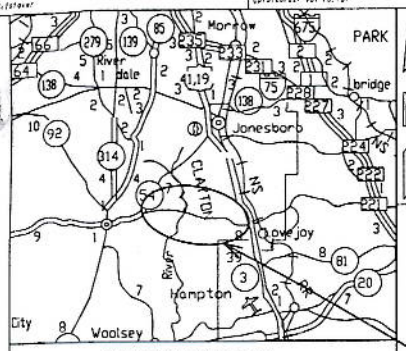
REVISED SAVINGS Difference [Original-Modified Recommend.] **$89,947**

Sources 1. Project Cost Estimate 3. GDOT Item Mean Summary 5. Richardson's stimating Manual
2. USC Estimate Database 4. Means Estimating Manual 6. Vendor (Specify) 7. Other (Specify)

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	STP00-2009-00(004)		

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PLAN AND PROFILE OF PROPOSED
SR 920 FROM SR 54/FAYETTE TO SR 3/US 19/CLAYTON



LOCATION SKETCH

PROJECT LOCATION

FEDERAL AID PROJECT
FAYETTE/CLAYTON COUNTIES
STP00-2009-00(004)

FEDERAL ROUTE • N/A
STATE ROUTE • 920
P.I.NO. 742870

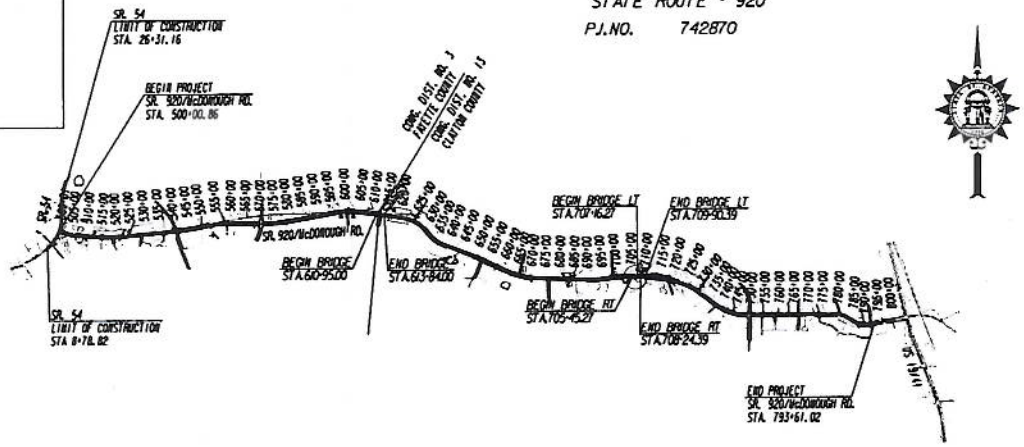
NOTE,
ALL REFERENCES IN THIS DOCUMENT, WHICH INCLUDES ALL PAPERS, WRITINGS, DOCUMENTS, DRAWINGS, OR PHOTOGRAPHS USED, OR TO BE USED IN CONNECTION WITH THIS DOCUMENT, TO "STATE HIGHWAY DEPARTMENT OF GEORGIA", "STATE HIGHWAY DEPARTMENT", "GEORGIA STATE HIGHWAY DEPARTMENT", "HIGHWAY DEPARTMENT", OR "DEPARTMENT" WHEN THE CONTEXT THEREOF MEANS THE STATE HIGHWAY DEPARTMENT OF GEORGIA, AND SHALL BE DEEMED TO MEAN THE DEPARTMENT OF TRANSPORTATION.

DESIGN DATA:
TRAFFIC A.D.T.: 27,700 2022
TRAFFIC A.D.T.: 41,200 2042
TRAFFIC D.H.V.: 2,435 2022
TRAFFIC D.H.V.: 3,610 2042
DIRECTIONAL DIST: 51/49
PEAK HR % TRUCKS: 7.5
24 HR. TRUCKS %: 7.5
SPEED DESIGN: 45 MPH

LOCATION & DESIGN APPROVAL DATE:

FUNCTIONAL CLASS:
URBAN MINOR ARTERIAL

THIS PROJECT IS 38% IN FAYETTE COUNTY AND 62% IN CLAYTON COUNTY AND IS 38% IN CONG. DIST. NO. 3 AND IS 62% IN CONG. DIST. NO. 13.



PREPARED BY: _____
DESIGN

RECOMMENDED FOR SUBMISSION BY: _____
DESIGN

SUBMITTED BY: _____
STATE DESIGN ENGINEER

DATE _____ CHIEF ENGINEER

THIS PROJECT HAS BEEN PREPARED USING THE HORIZONTAL GEORGIA COORDINATE SYSTEM OF 1994 (NAD 1983/94 WEST ZONE) AND THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

PLANS PREPARED AND SUBMITTED BY:

AEI
AMERICAN ENGINEERS, INC.
PROFESSIONAL ENGINEERING
DESIGN CONSULTANT
Branch Offices
65 Aberdeen Drive, Glasgow, KY 42141, (270) 651-7220
2500 Nelson Miller Parkway, Louisville, KY 40223, (502) 245-3813
1634 White Circle, Suite 101, Marietta, GA 30066, (770) 421-8422

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LENGTH OF PROJECT	COUNTY No. 13063 Project No. STP00-2009-00(004)
	MILES
NET LENGTH OF ROADWAY	5.422
NET LENGTH OF BRIDGES	0.139
NET LENGTH OF PROJECT	5.561
NET LENGTH OF EXCEPTIONS	0.0
GROSS LENGTH OF PROJECT	5.561

SCALE IN FEET
0 2000 4000 8000

PLANS COMPLETED	
REVISIONS	

DRAWING No. 01-001