

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE: CSSTP-0007-00(414) Camden County OFFICE: Program Delivery  
PI No.: 0007414  
CR90/Colerain Rd. from I-95 to Kings Bay Rd. DATE: January 31, 2012

FROM:  Bobby K. Hilliard, P.E., State Program Delivery Engineer

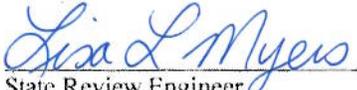
TO: Lisa Myers, Acting State Project Review Engineer  
Attn: Matt Sanders

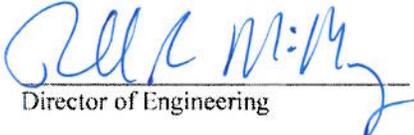
SUBJECT: Value Engineering Study-Reversal

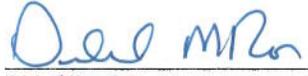
Reference is made to the VE Implementation letter dated September 29, 2009 for the above referenced project. Attached is a request to reverse implementation of Alternate RD-2. This Office concurs with the request and also sought concurrence from in-house Office of Design, Policy and Support.

If you have any questions, please contact Matt Bennett at (912) 271-7404.

BKH: MAH: JMB  
Attachments

Approved:  1/31/12  
State Review Engineer Date

Approved:  2/10/12  
Director of Engineering Date

Approved:  2/14/12  
Chief Engineer Date

Approved:  2/16/12  
FHWA Date

## MorelandAltobelliAssociates,Inc

2211 Beaver Run Road, Suite 190 • Norcross, Georgia 30071 • 770/263-5945 • Fax: 770/263-8166 • ma@maai.net



|   |   |                                       |  |   |                                     |
|---|---|---------------------------------------|--|---|-------------------------------------|
| Richard C. Boulam, PE<br>Vice President | Thomas D. Moreland, PE<br>Chairman/CEO  | Buddy Gratton, PE<br>President        | Vickie E. Moreland<br>Executive Vice President/CFO | George M. Byrd, PE<br>Senior Vice President | J. Holly Moreland<br>Vice President |
|   | Henry E. Collins, Jr.<br>Vice President | Bradley M. Hale, PE<br>Vice President | Albert J. Joyner, Jr.<br>Vice President            | L.N. Manchi, PE.<br>Vice President          | Joe McGrew, PE<br>Vice President    |

January 23, 2012

CSSTP-0007-00(414)  
Camden County  
Widening Colerain Road from I-95 to Kings Bay Road  
P.I. 0007414

Bobby Hilliard, P.E. State Program Delivery Engineer  
Office of Program Delivery- 25<sup>th</sup> Floor  
Georgia Department of Transportation  
600 West Peachtree Street NW  
Atlanta, Georgia 30308  
Attn: Matt Bennett

Dear Mr. Hilliard:

Moreland Altobelli Associates, Inc. (MAAI) on behalf of Camden County requests a Value Engineering (VE) Study Implementation Revision for PI 0007414. The VE Implementation letter was issued by your office on September 29, 2009.

MAAI requests to revise the implementation of Alternative RD-2. This alternative recommended that the 10-foot rural outside shoulders utilize a 4-foot paved shoulder on proposed Colerain Road from Sta 251+00 (Winding Road) to Sta 324+50 (approximately 1496 feet east of Kings Bay Road). Per the March 12, 2009 approved concept report the proposed Colerain Road rural section consisted of two 12-foot travel lanes, a 4-foot bike lane and 10-foot shoulders (6-foot, 6-inch paved and 3-foot, 6-inch grass) in each direction separated by a raised median. Implementation of Alternative RD-2 reduced the paved shoulder width from 6-foot, 6-inch to 4-foot which resulted in an estimated savings of \$126,328 as outlined in the VE Study Report. Implementation of Alternative RD-2 also utilized the 4-foot paved shoulder as the proposed bike lane which resulted in an additional estimated savings of \$258,716 not shown in the VE Study Report. The total estimated saving for implementing Alternative RD-2 is \$385,044.

Review of the revised concept report determined that the proposed 10-foot rural outside shoulder consisting of 4-foot paved and 6-foot grass did not meet the requirements of a 6-foot, 6-inch paved shoulder for a 4-foot bike lane including a 16-inch rumble strip offset 12-inches from the travel way per GDOT Design Policy Manual, Section 9.5.2 Bicycle facility Design 1. On-street Bicycle Facility page 9-11 revised March 1, 2011.





MAAI requests reversing the VE recommendation RD-2 as recommended by the Office of Design Policy and Support to incorporate a proposed 10-foot rural outside shoulder consisting of 3-foot, 6-inch grass and 6-foot 6-inch paved to accommodate a 4-foot bike lane and 16-inch rumble strip offset 12-inches from the travel way in each direction.

The VE Reversal of recommendation RD-2 to reduce the paved shoulder width from 6-foot, 6-inch to 4-foot would negate the estimated \$126,328 savings outlined in the VE Study Report. However the additional estimated \$258,716 savings not outlined in the VE Study Report would result by including the 4-foot bike lane as apart of rather than in addition to the 6-foot, 6-inch paved shoulder as shown in the approved concept report.

If you have any questions about this request or need additional information, please contact Project Manager, Maurice J. Sheehan or myself at 770-263-5945.

Sincerely,  
*Ralph C. Ramsdell*  
Ralph C. Ramsdell  
Project Engineer

Attachments: Office of Design Policy and Support VE Reversal Request, VE Implementation Letter, VE Study Report with modifications

Cc: Scott Brazell, Camden County  
M.J. Sheehan  
File 10104

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** CSSTP-0007-00(414) Camden **OFFICE:** Engineering Services  
P.I. No.: 0007414  
Colerain Road Widening and Reconstruction **DATE:** September 29, 2009

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

**TO:** Glenn Durrence, District Engineer - Jesup

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

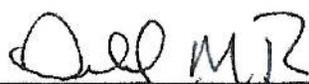
The VE Study for the above project was held June 8-11, 2009. Responses were received on September 29, 2009. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

| ALT # | Description  | Potential Savings/LCC | Implement | Comments  |
|-------|--|-----------------------|-----------|---|
| DR-1  | Eliminate the reverse crown  | Design Suggestion     | Yes       | This will be done, with modifications. The proposed widening typical section uses a reverse crown to achieve minimum cover over the extended cross drain pipes. The proposed reverse crown section at the triple 30" cross drain at Sta. 218+75 will be retained. See Attachment "A". The proposed reverse crown section between Sta. 109+40 to Sta. 116+40 Lt. and Sta. 123+20 to Sta. 130+30 Lt. will be revised to a normal crown section. |
| DR-2  | Modify or replace box culverts and utilize existing pavement from Sta. 265+00 to Sta. 295+00 | \$115,371             | Yes       | This will be done. See Attachment "B" for details.  |
| DR-3  | Slope urban section shoulders away from roadway to reduce earthwork and drainage             | \$130,310             | Yes       | This will be done.  |

|      |  |   |     |  |
|------|--|---|-----|--|
| BR-1 | Use a two span bridge with MSE walls               | Proposed = \$707,879<br>Actual = (-\$35,398)<br>cost increase | No  | Use of MSE walls limit the ability for future modifications that sloped embankments offer. Additionally, calculations performed by the design consultant indicate this recommendation would cause a cost increase of \$35,398. See Attachment "C" for calculations and Bridge Office concurrence.  |
| BR-2 | Reduce multi-use trail from 16 1/2 ft to 12 ft     | \$145,035   | No  | As proposed in the plans, the 10 ft multiuse path on the bridge meets the minimum clear width as indicated on page 55 of the AASHTO Guide for the Development of Bicycle Facilities. The 6'6" separation between the edge of shoulder and the shared use path eliminates the need for a physical barrier as noted on pages 35 and 36 of the above noted guide. |
| BR-3 | Use twin bridges                                   | \$555,968<br>(-\$297,260)<br>cost increase                    | No  | Calculations provided by the design consultant indicate that the use of twin bridges would cause a cost increase of \$274,965. Using a rural shoulder vs. urban shoulder would increase the cost by \$22,295. See Attachment "C" for calculations and Bridge Office concurrence.   |
| RD-2 | Utilize a 4 ft paved shoulder in the rural section | \$126,328   | Yes | This will be done.   |
| RD-3 | Reconstruct ramps as a Tight Urban Diamond         | \$1,094,467   | No  | The current design provides sufficient spacing (1606 ft) between the existing SB and NB ramps to allow for proposed and future left turn storage. The current ramp spacing also provides sufficient sight distances.   |

|       |   |                   |     |  |
|-------|---|-------------------|-----|--|
| RD-12 | Utilize the rural typical section from Sta. 186+21 to Sta. 251+00 | \$785,367         | No  | There is substantial residential development planned for this portion of the project. The proposed sidewalks would serve the county high school. Using urban shoulders in this area also minimizes impacts to the existing tree canopy on the south side of Colerain Road by eliminating the roadside ditch.   |
| RD-15 | Add left turn lane eastbound at Wildcat Drive                     | Design Suggestion | Yes | This will be done.   |
| RD-16 | Reduce construction on Brazell Road                               | \$25,345          | No  | In order to comply with FHWA's limited access requirements, Brazell Road must be relocated to the proposed location.   |
| RD-18 | Make Jimmy Lane and Bessie Lane Right-in/Right-out                | \$264,811         | Yes | This will be done.   |
| RD-19 | Overlay existing ramps and widen to the inside                    | \$2,406,111       | Yes | This will be done. See Attachment "D" for OMR concurrence.   |
| RD-20 | Reduce the sum of the ramp shoulders from 14 ft to 12 ft          | \$249,137         | No  | Implementation of RD-19 will result in the overlay or short reconstruction of the existing ramp shoulders. The sum of the existing on-ramp shoulders is 14 ft (4 ft inside, 10 ft outside). The sum of the existing shoulders for the SB off-ramp is 14 ft and the sum of the existing shoulders for the NB off-ramp is 10 ft (4 ft inside, 6 ft outside). |

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

Approved:   
 Gerald M. Ross, PE, Chief Engineer

Date: 9/30/09

# Value Analysis Design Alternative



|              |   |                  |        |
|--------------|---|------------------|--------|
| PROJECT:     | Georgia Department of Transportation<br>CSSTP-0007-00(414)) – P.I. No. 0007414<br>CR90/Colerain Road from I-95 to Kings Bay Road<br>Camden County | ALTERNATIVE NO.: | RD-2   |
| DESCRIPTION: | Utilize a 4' paved shoulder in the rural section  | SHEET NO.:       | 1 of 4 |

Original Design: 3/12/09 APPROVED CONCEPT REPORT: 4' BIKE LANES ADJACENT TO ETL AND 6 1/2' PAVED SHLDRS  
 The original design provides a 6'-6" paved shoulder from Station 251+00 to Station 324+50  
 10/10/08 DRAFT REV CONCEPT REPORT: 6 1/2' PAVED SHLDRS INCL 4' BIKE LANE

**Alternative:**

The alternative design would provide a 4'-0" paved shoulder from Station 251+00 to Station 324+50

**Opportunities:**

- Reduces paving costs

**Risks:**

- Less paved area for bike and pedestrian traffic

**Technical Discussion:**

AASHTO Policy on Geometric Design of Highways and Streets would allow the use of a 4' shoulder. This would be the minimum to accommodate bike traffic as outlined On Page 16 of AASHTO's guide for development of bicycle facilities. Since the subject road is a "low speed" facility and classified as a Minor Rural Arterial the use of rumble strips on the shoulders would not be required.

SEE SHEET 4 OF 4 FOR REVISED SAVINGS

| <del>COST SUMMARY</del>    | <del>INITIAL COST</del> | <del>PRESENT WORTH RECURRING COSTS</del> | <del>PRESENT WORTH LIFE-CYCLE COST</del> |
|----------------------------|-------------------------|--|--|
| <del>ORIGINAL DESIGN</del> | <del>\$ 328,504</del>   | <del>\$ 0</del>                          | <del>\$ 328,504</del>                    |
| <del>ALTERNATIVE</del>     | <del>\$ 202,176</del>   | <del>\$ 0</del>                          | <del>\$ 202,176</del>                    |
| <del>SAVINGS</del>         | <del>\$ 126,328</del>   | <del>\$ 0</del>                          | <del>\$ 126,328</del>                    |

Moreland Altobelli Associates, Inc.

PAGE 2 OF 4

PROJECT CSSTP - 0007-00 (414)

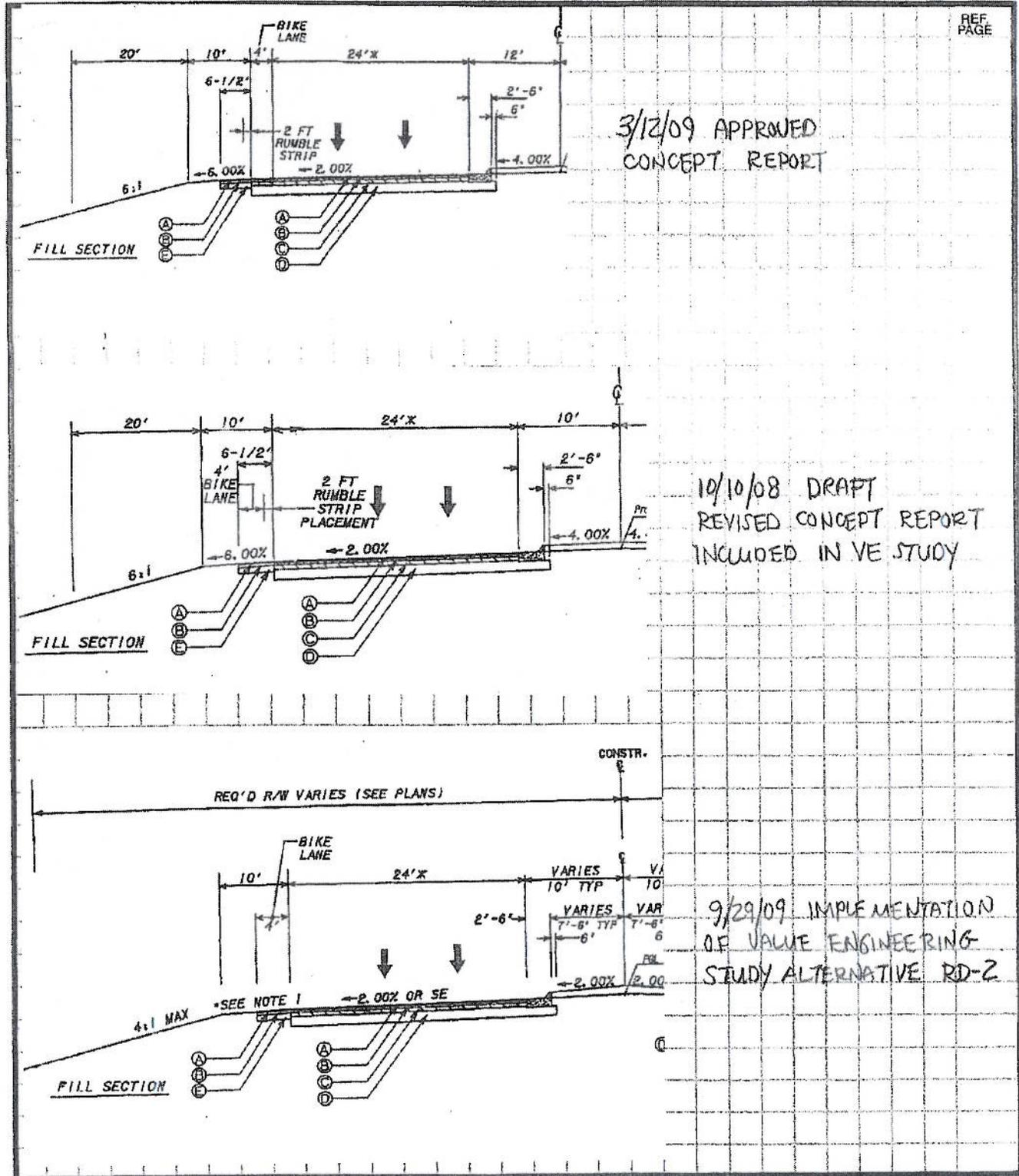
SHEET NO. 1 OF 1

SUBJECT TYPICAL SECTIONS : RURAL SHOULDER  
W/ 4' BIKE LANE

JOB NO. 10104

MADE BY RCR DATE 1/17/12

CHKD BY \_\_\_\_\_ DATE \_\_\_\_\_



# Calculations



|                     |  |                                     |
|---------------------|--|-------------------------------------|
| <b>PROJECT:</b>     | Georgia Department of Transportation<br>CSSTP-0007-00(414) – P.I. No. 0007414<br>CR90/Colerain Road from I-95 to Kings Bay Road<br>Camden County | <b>ALTERNATIVE NO.:</b><br><br>RD-2 |
| <b>DESCRIPTION:</b> | Utilize a 4' paved shoulder in the rural section   | <b>SHEET NO.:</b> 3 of 4            |

Station 251+00 to Station 324+50 = 7,350 LF

Length of the roadway = 7,350 LF,

Original 6.5' shoulders INCLUDES 4' BIKE LANES 10/10/08 DRAFT REV CONCEPT REPORT

Total Area of Paved Shoulder = (7,350 LF x 13.0') / (9 SF / SY) = 10,616.7 SY => 10,617 SY

Superpave 12.5mm = [10,617 SY \* 165#/SY-IN (2000#/Ton)] => 876 TN

Superpave 19.0mm = [10,617 SY \* 220#/SY-IN (2000#/Ton)] => 1,168 TN

8" GAB = 10,617 SY

Alternative 4.0' shoulders VE RECOMMENDATION 4' SHLDR = 4' BIKE LANE

Total Area of Paved Shoulder = (7,350 LF x 8.0') / (9 SF / SY) = 6533.3 SY => 6534 SY

Superpave 12.5mm = [6534 SY \* 165#/SY-IN (2000#/Ton)] => 539 TN

Superpave 19.0mm = [6534 SY \* 220#/SY-IN (2000#/Ton)] => 719 TN

8" GAB = 6534 SY

3/12/09 APPROVED CONCEPT REPORT 4' BIKE LANES ADJACENT TO ETL  
AND 6 1/2' PAVED SHLDRS

|               |             |                        |          |
|---------------|-------------|------------------------|----------|
| TOTAL AREAS : | BIKE LANES  | 7350 x 4 x 2 / 9 =     | 6534 SY  |
|               | PAVED SHLDR | 7350 x 6 1/2 x 2 / 9 = | 10617 SY |
|               |             | TOTAL                  | 17151 SY |

|                            |  |   |          |
|----------------------------|--|---|----------|
| SUPERPAVE 12.5mm           | 17151 SY x 165 lb/sy ÷ 2000 lb/TN                        | = | 1415 TN  |
| SUPERPAVE 19mm             | 17151 x 220 ÷ 2000                                       | = | 1887 TN  |
| SUPERPAVE 25mm             | 6534 x 440 ÷ 2000  | = | 1437 TN  |
| GAB 10"                    | (7350 x 4 x 2) x 10" / 12" / ft x 150 lb/cf ÷ 2000 lb/TN | = | 3675 TN  |
| GAB 8" USED FOR COMPARISON |  | = | 10617 SY |

