

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** NH000-0111-01(024) Chatham **OFFICE:** Engineering Services  
P.I. No.: 522870  
SR 204 from King George Blvd to Rio Rd **DATE:** July 7, 2010

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

**TO:** Bobby K. Hilliard, PE, State Program Delivery Engineer *REW*  
Attn.: Robert Murphy

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

The VE Study for the above project was held March 15 – 18, 2010. Responses were received on July 6, 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  |
|-------|--------------------------------------|-----------------------|-----------|---|
| B-1   | Bridge King George Blvd over SR 204  | \$2,687,000           | No        | The profile provided by the VE Team did not provide minimum vertical clearance over the full width of SR 204, including the ramp tapers, nor did it provide for intersection sight distance at either of the ramp intersections with King George Boulevard. The VE Team did not take into account the ROW impacts or acquisition costs to properties along King George Boulevard, including the resulting displacements of the Waffle House and the Forest Cove gate house. These additional ROW costs and the additional retaining wall and fill costs associated with the increased profile height would require an additional \$1,560,000. |
| B-2   | Use SE ramp alignment in NW quadrant | \$1,268,000           | No        | This recommendation would not provide an acceptable acceleration length for the entrance ramp terminal.   |

|     |   |   |                         |  |
|-----|---|---|-------------------------|--|
| B-4 | Use a reduced pavement thickness for ramp shoulders not required for staging          | \$133,000                                 | Yes                     | This will be done.   |
| B-5 | Use reduced pavement section for King George Blvd                                     | Proposed = \$173,000<br>Actual = \$96,000 | Yes, with modifications | A preliminary pavement analysis indicates the 8.5 inch asphalt/12 inch GAB section currently included in the cost estimate can be reduced to a 7.5 inch asphalt/8 inch GAB section. This is slightly different than what was suggested by the VE Team; therefore, the savings have been adjusted. As design progresses, a detailed pavement analysis will be performed and an appropriate pavement section will be submitted for review and approval.  |
| C-2 | Eliminate/minimize retaining wall at the sound barrier location along the NE quadrant | \$202,800                                 | No                      | The inclusion of the side barrier retaining wall along the WB SR 204 to NB King George ramp minimizes impacts to the adjacent property, reducing required ROW costs, consequential damages to parking at the former Piggly Wiggly site and proximity damages to Georgetown Woods Apartments. Without the retaining wall, an additional 10 to 15 feet of ROW would be required. Elimination of the retaining wall would increase ROW acquisition costs by \$522,000, clearly outweighing the potential for construction cost savings. |
| C-3 | Eliminate/minimize retaining wall along the western limit of SR 204                   | Proposed = \$79,800<br>Actual = \$174,000 | Yes, with modifications | The proposed side barrier retaining wall will be eliminated from Sta. 439+25 to Sta. 443+25 and replaced with guardrail and v-gutter in front of the sound barrier with a 3:1 minimum side slope behind the sound barrier. Beginning at Sta. 443+25, a side barrier retaining wall will be required to avoid ROW acquisition from adjacent residential properties.   |



REW/LLM

Attachments

c: Ben Buchan  
Bobby Hilliard/Mike Haithcock/Robert Murphy  
Paul Liles/Bill Duvall/Bill Ingalsbe/Jennifer Tait  
Larry Bowman  
Will Murphy/Brad Saxon/Teresa Scott  
Ken Werho  
Lisa Myers  
Matt Sanders

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** NH000-0111-01(024) Chatham County      **OFFICE:** Program Delivery  
P.I. No.: 522870  
SR204 and King George Blvd.      **DATE:** July 6, 2010

**FROM:** Bobby K. Hilliard, PE, State Program Delivery Engineer *B.H.*

**TO:** **Ronald E. Wishon**, State Project Review Engineer  
Attn.: Lisa Myers

**SUBJECT: RESPONSE TO VALUE ENGINEERING STUDY ALTERNATIVES**

Attached are the responses for the Value Engineering Study. This office concurs with the responses. Along with our consultant responses we have attached concurring documentation from our Bridge office, OMR, and Roadway Design Office for compliance.

If you have any questions, please contact Robert Murphy, Project Manager at (404-631-1586).

BKH:  
RPM  
c: Ben Buchan

## McGee Partners, Inc.

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F 770.938.6333

April 15, 2010

Mr. Bobby Hilliard, P.E.  
State Program Delivery Engineer  
Georgia Department of Transportation  
600 West Peachtree Street – 25<sup>th</sup> Floor  
Atlanta, Georgia 30308

Attn: Mr. Robert Murphy, Senior Project Manager

Re: SR 204 Improvements at King George Blvd.  
NH000-0111-01(024), Chatham County  
PI No. 522870  
Contract No.: AEOCDDES060054  
**VALUE ENGINEERING STUDY  
RECOMMENDATION RESPONSES**

Gentlemen:

After reviewing the recommendations from the Value Engineering Study Report prepared by MACTEC, dated April 7, 2010, we offer the following responses to the design alternatives suggested for the referenced project:

**B-1: Construct King George Boulevard over SR 204.** This recommendation proposes to construct King George Boulevard over SR 204 in lieu of SR 204 over King George Boulevard as in the original design. This proposed change simplifies construction and SR 204 remains on grade, thus reducing wall heights, median barrier construction and paving.  
**Potential savings: \$2,687,000**

**Response:** No, the design team will not implement this recommendation. The profile provided by the VE Team did not provide minimum vertical clearance over the full width of SR 204, including the ramp tapers, nor did it provide for intersection sight distance at either of the ramp intersections with King George Boulevard. The VE Team did not take into account the impacts or right of way acquisition costs to properties along King George Boulevard, including the resulting displacements of the Waffle House and the Forest Cove gate house. Taking into account the right of way acquisition costs and the additional retaining wall and fill costs associated with the increased profile height, this recommendation would substantially increase the cost of the project.

**Revised potential savings (increase): (\$1,560,000)**

*(See attached supporting documentation for graphics showing the King George profile and impacts to properties, along with updated savings cost estimate.)*

**B-2: Use SE ramp alignment in NW quadrant.** For the NW quadrant, use the ramp alignment as shown on the plans for the SE loop, 30 mph design speed. This idea is dependent on acceptance of idea B-1, constructing King George Blvd over SR 204, to eliminate the use of this ramp for mainline staging purposes.

**Potential savings: \$1,268,000**

**Response: No,** the design team will not implement this recommendation. The proposed alignment would not provide for an acceptable acceleration length for the entrance ramp terminal.

The justification provided by the VE Team indicated that using a tighter ramp radius "will allow a full length acceleration lane and taper of 720 feet, tying in before the CSX railroad bridge," eliminating "the railroad bridge reconstruction and the mainline work...on SR 204 west of the RR bridge." Exhibit 10-70 from AASHTO's Green Book indicates a minimum acceleration length of 800 feet is required for an entrance curve design speed of 35 mph to a highway design speed of 60 mph. The design team developed three alternatives utilizing the tighter 30 mph loop ramp, each with a 35 mph entrance curve. Alternative A provides a parallel-type entrance with 340 feet of acceleration length. Alternative B provides a 50:1 taper-type entrance with 40 feet of acceleration length. Alternative C provides a 23:1 taper-type entrance with 380 feet of acceleration length. None of these alternatives provide for the minimum acceleration length of 800 feet. The current concept provides a parallel-type entrance with 1240 feet of acceleration length.

*(See attached supporting documentation for graphics showing the alternative entrance ramp configurations.)*

**B-4: Use Shoulder pavement for ramps not required for staging.** This recommendation proposes a reduced pavement thickness for ramp shoulders not required for staging operations. This will be at the ramps in the southeast quadrant.

**Potential savings: \$133,000**

**Response: Yes,** the design team will implement this recommendation.

**B-5: Use a reduced pavement section for King George Blvd.** This recommendation proposes a reduced pavement thickness for King George Blvd. Existing traffic volumes (ADT's) on SR 204 are 63,000 vpd while the King George Blvd is 20,000 vpd, roughly 3 times the volume.

**Potential savings: \$173,000**

**Response: Yes,** the design team will implement this recommendation with modifications. A preliminary pavement analysis indicates the 8.5-inch asphalt/12-inch GAB section currently included in the concept cost estimate can be reduced to a 7.5-inch asphalt/8-inch GAB section. As the design proceeds, a detailed pavement analysis will be performed and an appropriate pavement section will be

presented for review and approval by the Department's Pavement Design Committee.

**Revised potential savings: \$96,000**

*(See attached supporting documentation for updated savings cost estimate and pavement analysis.)*

**C-2: Eliminate/minimize retaining wall at the sound barrier location along the NE quadrant.** This recommendation eliminates the footing and retaining wall portions of the side barrier placed in front of and to protect the noise barrier, which will have post and footing elements as part of its own support.

**Potential savings: \$202,800**

**Response: No,** the design team will not implement this recommendation. The inclusion of the side barrier retaining wall along the WB SR 204 to NB King George ramp minimizes impacts to the adjacent properties, reducing required right of way costs, consequential damages to parking at the former Piggly Wiggly site and proximity damages to Georgetown Woods Apartments. Without the retaining wall, an additional 10 to 15 feet of Right of Way would be required to accommodate the widened shoulder and fill slope. Elimination of the retaining wall would increase right of way acquisition costs by about \$522,000, clearly outweighing the potential construction cost savings.

**Revised potential savings (increase): (\$319,000)**

*(See attached supporting documentation for right of way acquisition cost estimate.)*

**C-3: Eliminate/minimize retaining wall along the (western) limit of SR 204.** This recommendation eliminates the footing and retaining wall portions of the side barrier placed in front of and to protect the noise barrier, which will have post and footing elements as part of its own support. This can be applied in areas where a 4:1 sideslope can be constructed, station 439+25 to 444+75.

**Potential savings: \$79,800**

**Response: Yes,** the design team will implement this recommendation with modifications. The proposed side barrier retaining wall will be eliminated from station 439+25 to 443+25 and replaced with guardrail and v-gutter in front of the sound barrier with a 3:1 minimum side slope behind the sound barrier. Beginning at station 443+25, a side barrier retaining wall is required to avoid right of way acquisition from adjacent residential properties.

**Revised potential savings: \$174,000**

**E-1: Use a center pier for the SR 204 bridge over King George Blvd.** This recommendation proposes to use a two span bridge with a concrete intermediate bent in the middle of KGB to reduce the structure depth of the bridge and raise the profile of KGB. Jersey style side barrier will be added parallel to the intermediate pier to protect the travelling public and traffic impact attenuators will be added to the end of the piers at the side barrier ends to protect the blunt ends.

Mr. Bobby Hilliard, P.E.  
Page 4  
April 15, 2010

**McGee Partners, Inc.**

***Potential increase: (\$10,000)***

**Response:** No, the design team will not implement this recommendation. Since this item does not provide for a cost savings to the project and would not provide added benefit, it should not be implemented.

**G-2: Delete WB off ramp to King George Blvd and add a signal and left turn lane to the loop ramp.** This recommendation would eliminate the SR204 WB ramp to NB KGB and add a left turn lane to the proposed ramp. A traffic signal is anticipated to be required.

***Potential savings: \$1,193,000***

**Response:** No, the design team will not implement this recommendation. The WB exit ramp to NB King George Boulevard will be used during staged construction as a detour for mainline SR 204 traffic during the construction of the SR 204 bridge over King George Boulevard. Further, eliminating this ramp would reduce the efficiency of traffic operations on SR 204 and King George Boulevard. The WB to NB exit ramp is expected to carry 5,600 AADT in 2035 while the WB to SB ramp will carry 8,600 AADT. Maintaining these movements on separate ramps improves the weaving and diverging on SR 204 and reduces delays at the ramp intersection with King George Boulevard.

**K-1: Eliminate interchange lighting.** This recommendation will eliminate the high mast interchange lighting, which is adjacent to residential areas.

***Potential savings: \$630,000***

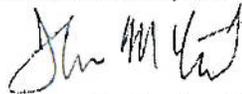
**Response:** No, the design team will not implement this recommendation. The project will include interchange lighting as requested by Chatham County officials, who have committed to energize and maintain the lighting. The Office of Design Policy and Support has reviewed the project and has determined that the project meets AASHTO warranting criteria for lighting. It is anticipated that low mast lighting will be utilized where adjacent to residential areas.

We have attached a letter-size version of the Conceptual Plans Cover Sheet for reference.

Please let me know if you have any questions or comments.

Sincerely,

McGee Partners, Inc.



Thomas M. Crochet, PE, PTOE  
President

Enclosures

NH000-0111-01(024), Chatham County  
 VE Study Recommendation Responses  
 SUPPORTING DOCUMENTATION

Item No.: B-1 (Cont.)

SR 204 at King George Blvd.  
 PI 522870  
 Chatham County  
 April 12, 2010

VE COST ESTIMATE

Item No. B-1:  
 Construct King George Boulevard over SR 204

Additional construction costs due to increased height of profile to provide adequate clearance over SR 204, with minimum SSD

| Item No.                             | Description                        | Units | Unit Price | Original Estimate |               | VE Estimate |                     | Revised Estimate |                       |
|--------------------------------------|------------------------------------|-------|------------|-------------------|---------------|-------------|---------------------|------------------|-----------------------|
|                                      |                                    |       |            | Quantity          | Extension     | Quantity    | Extension           | Quantity         | Extension             |
| 150-1000                             | Traffic Control                    | LS    | Lump       | 1                 | \$ 990,000    | 1           | \$ 500,000          | 1                | \$ 500,000            |
| 205-0001                             | Unsoiled Excav.                    | CY    | \$ 3.20    | 12,540            | \$ 40,128     | -           | \$ -                | 38,000           | \$ 121,600            |
| 610-0715                             | Remove Conc. Median Barrier        | LF    | \$ 104.87  | 3,400             | \$ 356,558    | -           | \$ -                | -                | \$ -                  |
| various                              | Base and Asphalt                   | SY    | \$ 45.00   | 100,000           | \$ 4,500,000  | 99,000      | \$ 4,455,000        | 99,000           | \$ 4,455,000          |
| 627-9510                             | Retaining Wall - MSE - 0-10 ft. H  | SF    | \$ 50.00   | -                 | \$ -          | 7,000       | \$ 350,000          | 9,000            | \$ 450,000            |
| 627-9520                             | Retaining Wall - MSE - 10-20 ft. H | SF    | \$ 53.00   | 35,185            | \$ 1,864,805  | 3,000       | \$ 159,000          | 5,000            | \$ 265,000            |
| 627-9530                             | Retaining Wall - MSE - 20-30 ft. H | SF    | \$ 55.00   | 4,389             | \$ 241,395    | 16,125      | \$ 886,875          | 18,125           | \$ 996,875            |
| 621-6002                             | Conc. Barrier Type S-2             | LF    | \$ 90.69   | 3,300             | \$ 299,277    | -           | \$ -                | -                | \$ -                  |
|                                      | Bridge Complete                    | SF    | \$ 100.00  | 28,160            | \$ 2,816,000  | 21,952      | \$ 2,195,200        | 21,952           | \$ 2,195,200          |
| Subtotal Construction                |                                    |       |            |                   | \$ 11,108,163 |             | \$ 8,546,075        |                  | \$ 8,983,675          |
| Markup 5%                            |                                    |       |            |                   | \$ 555,408    |             | \$ 427,304          |                  | \$ 449,184            |
| TOTAL Construction                   |                                    |       |            |                   | \$ 11,663,571 |             | \$ 8,973,379        |                  | \$ 9,432,859          |
| Right of Way Acquisition Cost        |                                    |       |            |                   | \$ -          |             | \$ -                | **               | \$ 3,791,000          |
| Utility Relocation Cost              |                                    |       |            |                   | \$ -          |             | \$ -                |                  | \$ -                  |
| TOTAL PROJECT COST                   |                                    |       |            |                   | \$ 11,663,571 |             | \$ 8,973,379        |                  | \$ 13,223,859         |
| TOTAL ACTUAL COST SAVINGS (INCREASE) |                                    |       |            |                   |               |             | <b>\$ 2,690,192</b> |                  | <b>\$ (1,560,000)</b> |

Quantity Calculations - Additional Quantities due to Revised Profile

Additional measured profile area: 6,200 SF

Additional Fill

King George Roadway/Shoulders 6,200 SF x 150 FT width = 930,000 CF  
 Fill slope on east side of King George 6,200 SF x 15 FT avg. height = 93,000 CF  
 1,023,000 CF  
 38,000 CY

Additional MSE Retaining Wall along west side of King George Blvd.

Estimated 6,000 SF split equally:  
 Retaining Wall - MSE - 0-10 ft. Ht. 2,000 SF + 7,000 (VE Estimate) = 9,000 SF  
 Retaining Wall - MSE - 10-20 ft. Ht. 2,000 SF + 3,000 (VE Estimate) = 5,000 SF  
 Retaining Wall - MSE - 20-30 ft. Ht. 2,000 SF + 16,125 (VE Estimate) = 18,125 SF

\*\* See next page for Right of Way Acquisition Cost Estimate

NH000-0111-01(024), Chatham County  
 VE Study Recommendation Responses  
 SUPPORTING DOCUMENTATION

Item No.: B-1 (Cont.)

SR 204 at King George Blvd.  
 PI 522870  
 Chatham County  
 April 12, 2010

**VE COST ESTIMATE**

Item No. B-1:  
 Construct King George Boulevard over SR 204

Estimate of Additional Right of Way Impacts Not Included in VE Team Estimate

**Additional Property Costs**

| Parcel                                 | Req'd R/W<br>(acs.) | Cost per Acre<br>Right of Way | Req'd Esmt<br>(acs.) | Cost per Acre<br>Easement | Extension         |
|--|---------------------|-------------------------------|----------------------|---------------------------|-------------------|
| Waffle House                           | 0.65                | \$ 700,000                    |                      |                           | \$ 455,000        |
| Circle K                               |                     | \$ 700,000                    | 0.10                 | \$ 350,000                | \$ 35,000         |
| GSG Savannah (Food Lion)               |                     | \$ 350,000                    | 0.26                 | \$ 175,000                | \$ 45,799         |
| Watford-Sims (Sonic)                   | 0.11                | \$ 700,000                    | 0.10                 | \$ 350,000                | \$ 113,742        |
| Forest Cove Homeowners - corner parcel | 0.19                | \$ 100,000                    |                      |                           | \$ 19,284         |
| Forest Cove Homeowners - Mariners Way  | 0.20                | \$ 100,000                    |                      |                           | \$ 20,202         |
| Georgetown Apartments                  |                     | \$ 125,000                    | 0.71                 | \$ 62,500                 | \$ 44,479         |
| A-C Financing (former Piggly Wiggly)   |                     | \$ 350,000                    | 0.85                 | \$ 100,000                | \$ 85,000         |
| <b>Total Property Costs</b>            |                     |                               |                      |                           | <b>\$ 818,506</b> |

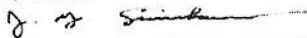
**Additional Damages**

| Parcel   | Extension  |                   |
|--|------------|-------------------|
| Waffle House: Consequential displacement   | \$ 210,000 |                   |
| Circle K: Consequential loss of access to King George                              | \$ 100,000 |                   |
| Forest Cove Homeowners: Displacement & relocation of Gate House and entrance gates | \$ 150,000 |                   |
| Georgetown Apartments: Temporary loss of parking, damages to detention pond        | \$ 100,000 |                   |
| Sonic, Food Lion, Circle K, etc.: Temporary loss of access                         | \$ 100,000 |                   |
| A-C Financing: Consequential - temporary lost parking                              | \$ 50,000  |                   |
| <b>Total Damages Costs</b>   |            | <b>\$ 710,000</b> |

|  |                     |
|--|---------------------|
| <b>Total Property, Displacement &amp; Damages Cost</b> | <b>\$ 1,528,506</b> |
| Scheduling Cost 55%                                    | \$ 840,678          |
| Administrative Cost 60%                                | \$ 1,421,510        |

**TOTAL ADDITIONAL RIGHT OF WAY ACQUISITION COST** **\$ 3,791,000**

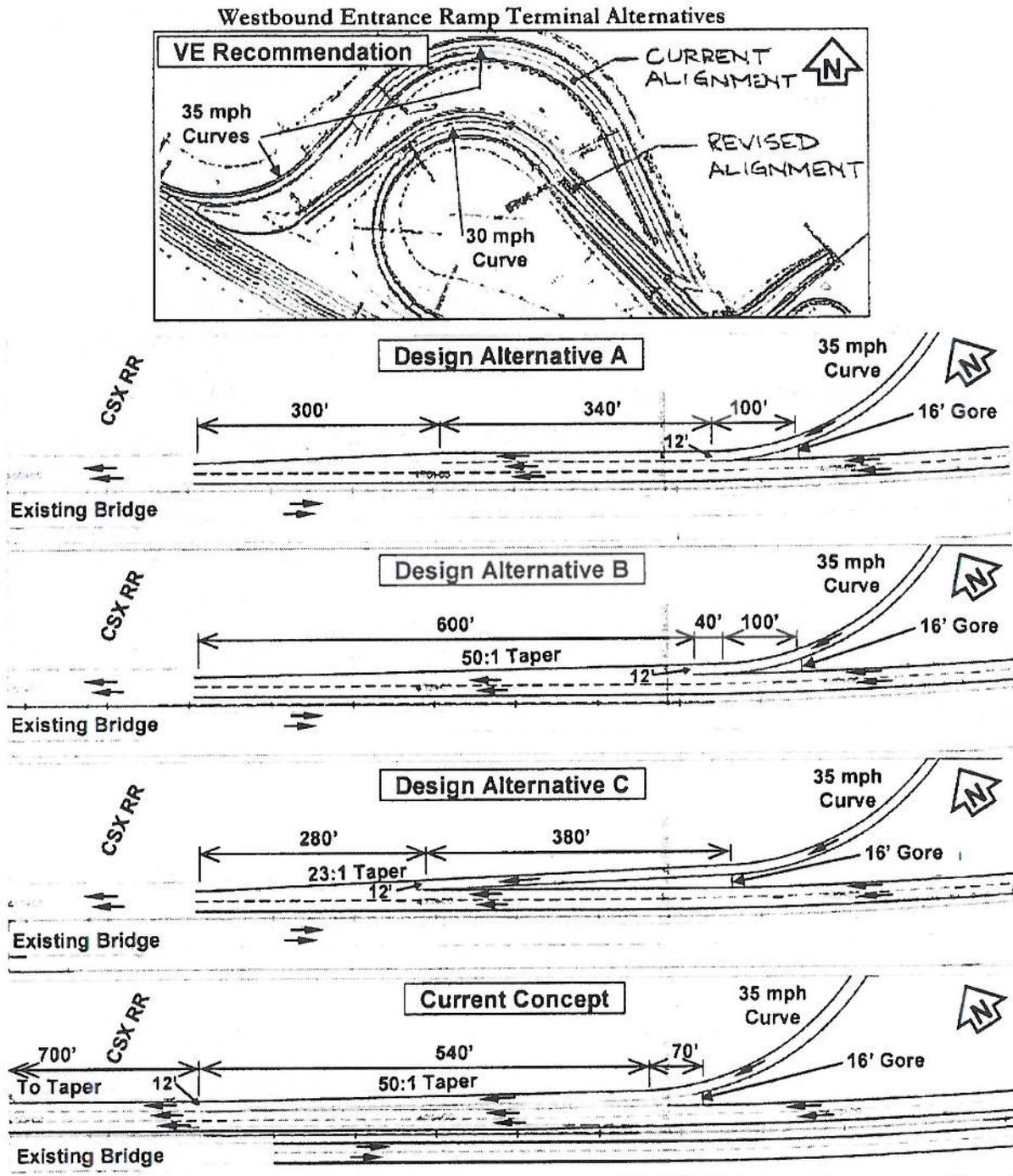
Prepared By:



John G. Simshauser, Cert. No. 2772  
 Moreland Altobelli Associates, Inc.

NH000-0111-01(024), Chatham County  
VE Study Recommendation Responses  
SUPPORTING DOCUMENTATION

Item No.: B-2



NH000-0111-01(024), Chatham County  
 VE Study Recommendation Responses  
 SUPPORTING DOCUMENTATION

Item No.: B-5

SR 204 at King George Blvd.  
 PI 522870  
 Chatham County  
 April 9, 2010

VE COST ESTIMATE

Item No. B-5:  
 Reduced King George Pavement Section

| Item No.                      | Description                            | Units | Unit Price | Original Estimate |          |            | Revised Estimate |          |            |
|-------------------------------|--|-------|------------|-------------------|----------|------------|------------------|----------|------------|
|                               |  |       |            | Section           | Quantity | Extension  | Section          | Quantity | Extension  |
| 310-1101                      | GR AGGR BASE CRS, INCL MATL            | TN    | \$ 18.20   | 12"               | 5,790    | \$ 105,378 | 8"               | 3,860    | \$ 70,252  |
| 402-3130                      | RECYCLED ASPH CONC 12.5 MM SUPERPAVE   | TN    | \$ 66.89   | 1-1/2"            | 730      | \$ 48,830  | 1-1/2"           | 730      | \$ 48,830  |
| 402-3150                      | RECYCLED ASPH CONC 19 MM SUPERPAVE, (E | TN    | \$ 67.27   | 3"                | 1,450    | \$ 97,542  | 2"               | 970      | \$ 65,252  |
| 402-3121                      | RECYCLED ASPH CONC 25 MM SUPERPAVE, (E | TN    | \$ 62.20   | 4"                | 1,930    | \$ 120,046 | 4"               | 1,930    | \$ 120,046 |
| 413-1000                      | BITUM TACK COAT                        | GL    | \$ 2.35    | 4 Coats           | 1,170    | \$ 2,750   | 3 Coats          | 880      | \$ 2,068   |
| Subtotal Construction         |  |       |            |                   |          | \$ 374,545 | \$ 306,448       |          |            |
| Asphalt/Fuel Contingency      |  |       |            |                   |          | \$ 162,965 | \$ 141,571       |          |            |
| E&C 10%                       |  |       |            |                   |          | \$ 37,454  | \$ 30,645        |          |            |
| TOTAL Construction            |  |       |            |                   |          | \$ 574,964 | \$ 478,663       |          |            |
| Right of Way Acquisition Cost |  |       |            |                   |          | \$ -       | \$ -             |          |            |
| Utility Relocation Cost       |  |       |            |                   |          | \$ -       | \$ -             |          |            |
| TOTAL PROJECT COST            |  |       |            |                   |          | \$ 574,964 | \$ 478,663       |          |            |

TOTAL ACTUAL COST SAVINGS (INCREASE) **\$ 96,000**

Quantity Calculations

Quantity calculations based on 71,600 SF of full-depth pavement construction along King George Blvd.  
 Original quantities from detailed quantity take-off calculations.

|  |    | Original<br>(SF) | Rev.<br>(IN) |   | Orig.<br>(IN) |   | Revised<br>(SF) |
|--|----|------------------|--------------|---|---------------|---|-----------------|
| GR AGGR BASE CRS, INCL MATL            | TN | 5,790 x          | 8            | / | 12            | = | 3,860           |
| RECYCLED ASPH CONC 12.5 MM SUPERPAVE   | TN | 730 x            | 1.5          | / | 1.5           | = | 730             |
| RECYCLED ASPH CONC 19 MM SUPERPAVE, (E | TN | 1,450 x          | 2            | / | 3             | = | 970             |
| RECYCLED ASPH CONC 25 MM SUPERPAVE, (E | TN | 1,930 x          | 4            | / | 4             | = | 1,930           |
| BITUM TACK COAT                        | GL | 1,170 x          | 3            | / | 4             | = | 880             |

NH000-0111-01(024), Chatham County  
 VE Study Recommendation Responses  
**SUPPORTING DOCUMENTATION**

Item No.: B-5 (Cont.)

**McGee Partners, Inc.**

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**FLEXIBLE PAVEMENT DESIGN ANALYSIS**

(Based on AASHTO Interim Guide for Design of Flexible Pavement Structures)

Project No: NH000-0111-01(024) PI No: 522870 County: Chatham

Description: SR 204/Abercorn Street Extension Improvements, from Pine Grove Road (CR 68)  
to Veterans Parkway (CR 975), including construction of a grade separated  
interchange at King George Boulevard (CR 71)

Type of Adjoining Pavement: \_\_\_\_\_ Beginning of Project: Asphalt  
 End of Project: Asphalt

Traffic Data: 24 Hr. Truck Percentage 5.00%  
 One Way AADT Beginning of Design Period 14000 2015 Year  
 One Way AADT End of Design Period 17000 2035 Year  
 One Way AADT Mean 15500

Design Loading: 18k Axle  

| Volume                | LDF   | %  | Description        | Eq. Load   |     |
|-----------------------|-------|----|--------------------|------------|-----|
| 15500 x               | 0.9 x | 2% | Combination Trucks | x 0.730 =  | 204 |
| 15500 x               | 0.9 x | 3% | SU Type Vehicles   | x 0.400 =  | 168 |
| 15500 x               |       |    | Passenger Cars     | x 0.0040 = | 0   |
| Total Daily Loading = |       |    |                    |            | 372 |

Total Design Period Loading: 372 x 365 x 20 = 2,715,600

Design Data:  
 Serviceability (Pt): 2.5  
 Soil Support Value (Si): 4 Regional Factor (R): 1.7

**Recommended Flexible Pavement Structure:**

| Type of Material                               | Thickness    | Coef. | SN   |
|--|--------------|-------|------|
| Asphaltic Concrete Surface - 12.5 mm Superpave | 1.50         | 0.44  | 0.66 |
| Asphaltic Concrete Binder - 19 mm Superpave    | 2.00         | 0.44  | 0.88 |
| Asphaltic Concrete Base - 25 mm Superpave      | 1.00         | 0.44  | 0.44 |
| Asphaltic Concrete Base - 25 mm Superpave      | 3.00         | 0.30  | 0.90 |
| Graded Aggregate Base Course                   | 8.00         | 0.16  | 1.28 |
| <b>TOTAL</b>                                   | <b>15.50</b> |       |      |

Required Weighted Structural Value (SN): 4.38 Total SN = 4.16  
 Underdesign 5 %

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Prepared By: \_\_\_\_\_ Date: 4/12/10

R. Christopher Marsengill, P.E.

NH000-0111-01(024), Chatham County  
 VE Study Recommendation Responses  
**SUPPORTING DOCUMENTATION**

**Item No.: C-2**

SR 204 at King George Blvd.  
 PI 522870  
 Chatham County  
 April 12, 2010

**VE COST ESTIMATE**

Item No. C-2:  
 Eliminate/Minimize Retaining Wall Along NE Quadrant

Estimate of Additional Right of Way Impacts Not Included in VE Team Estimate

**Additional Property Costs**

| Parcel                                  | Req'd Area<br>(acs.) | Cost per Acre | Extension        |
|---|----------------------|---------------|------------------|
| A-C Financing (former Piggly Wiggly)    | 0.18                 | \$ 350,000    | \$ 63,000        |
| Sugar Magnolia (Georgetown Woods Apts.) | 0.16                 | \$ 125,000    | \$ 20,000        |
| <b>Total Property Costs</b>             |                      |               | <b>\$ 83,000</b> |

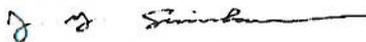
**Additional Damages**

| Parcel   | Spaces | Cost per Space | Extension         |
|--|--------|----------------|-------------------|
| A-C Financing: Consequential - lost parking                                  | 15     | \$ 4,500       | \$ 67,500         |
| Sugar Magnolia: Proximity - to apartment building, displacement of A/C units |        |                | \$ 60,000         |
| <b>Total Damages Costs</b>   |        |                | <b>\$ 127,500</b> |

|  |                   |
|--|-------------------|
| <b>Total Property, Displacement &amp; Damages Cost</b> | <b>\$ 210,500</b> |
| <b>Scheduling Cost</b> 55%                             | <b>\$ 115,775</b> |
| <b>Administrative Cost</b> 60%                         | <b>\$ 195,765</b> |

**TOTAL ADDITIONAL RIGHT OF WAY ACQUISITION COST** **\$ 522,000**

Prepared By :



John G. Simshauser, Cert. No. 2772  
 Moreland Altobelli Associates, Inc.

Potential savings from VE Report (construction only) \$ 202,800

Additional Right of Way Cost \$ 522,000

**TOTAL ACTUAL COST SAVINGS (INCREASE)** **\$ (319,000)**

NH000-0111-01(024), Chatham County  
 VE Study Recommendation Responses  
**SUPPORTING DOCUMENTATION**

**Item No.: C-3**

SR 204 at King George Blvd.  
 PI 522870  
 Chatham County  
 April 9, 2010

**VE COST ESTIMATE**

Item No. C-3:

Eliminate/minimize retaining wall along western limit of SR 204

Modified implementation, replace side barrier wall with guardrail from Sta 439+25 to 443+25

| Item No.                                    | Description                           | Units | Unit Price | Original Estimate |            | Revised Estimate |                   |
|---|---------------------------------------|-------|------------|-------------------|------------|------------------|-------------------|
|   |                                       |       |            | Quantity          | Extension  | Quantity         | Extension         |
| 621-6201                                    | CONCRETE SIDE BARRIER, TP 2-SA        | LF    | \$ 450.00  | 400               | \$ 180,000 | -                | \$ -              |
| 441-3999                                    | CONCRETE V GUTTER                     | LF    | \$ 19.81   |                   | \$ -       | 400              | \$ 7,924          |
| 641-1200                                    | GUARDRAIL, TP W                       | LF    | \$ 17.34   |                   | \$ -       | 400              | \$ 6,936          |
| 641-5001                                    | GUARDRAIL ANCHORAGE, TP 1             | EA    | \$ 653.71  |                   | \$ -       | 1                | \$ 654            |
| 206-0002                                    | BORROW EXCAV, INCL MATL               | CY    | \$ 4.00    |                   | \$ -       | 330              | \$ 1,320          |
| various                                     | Additional grassing & erosion control |       |            |                   |            |                  | \$ 5,000          |
|   | <b>Subtotal Construction</b>          |       |            |                   | \$ 180,000 |                  | \$ 21,834         |
|   | Asphalt/Fuel Contingency              |       |            |                   | \$ -       |                  | \$ -              |
|   | E&C 10%                               |       |            |                   | \$ 18,000  |                  | \$ 2,183          |
|   | <b>TOTAL Construction</b>             |       |            |                   | \$ 198,000 |                  | \$ 24,017         |
|   | Right of Way Acquisition Cost         |       |            |                   | \$ -       |                  | \$ -              |
|   | Utility Relocation Cost               |       |            |                   | \$ -       |                  | \$ -              |
|   | <b>TOTAL PROJECT COST</b>             |       |            |                   | \$ 198,000 |                  | \$ 24,017         |
| <b>TOTAL ACTUAL COST SAVINGS (INCREASE)</b> |                                       |       |            |                   |            |                  | <b>\$ 174,000</b> |

**Quantity Calculations**

Replace 400 LF of Type 2-SA Concrete Side Barrier with Guardrail, V-Gutter and 4:1 Slope

Additional Fill (Borrow Excavation)

|                     |    | <u>Shoulder</u> | <u>Slope</u> |
|---------------------|----|-----------------|--------------|
| Average Fill Height | FT | 2               | 2            |
| Average Fill Width  | FT | 6 / 1           | 10 / 2       |
| Length              | FT | 400             | 400          |
|                     | CY | 180             | 150          |

## Murphy, Robert

---

**From:** McMurry, Russell  
**Sent:** Monday, May 24, 2010 8:13 PM  
**To:** Murphy, Robert  
**Subject:** Re: P.I.#522870 SR 204 and King George Blvd. Improvements.

Robert,  
Based on the comments without review of materials, the responses seem adequate.  
Russell McMurry  
Georgia Department of Transportation  
Sent via Blackberry

---

**From:** Murphy, Robert  
**To:** Liles, Paul; DuVall, Bill; McMurry, Russell; Geary, Georgene; Jubran, Abdallah (AJ); Story, Brent; Hopkins, Eugene  
**Sent:** Mon May 24 08:11:28 2010  
**Subject:** P.I.#522870 SR 204 and King George Blvd. Improvements.  
Team,

I have attached a copy of McGee Partners official responses to the V.E. recommendations for P.I. #522870 SR204 and King George Blvd. Improvements.

Please review each recommendation and responses accordingly and inform the Office of Program Delivery if you are in agreement with the response or you disagree with the response. You can send me an email or official letter stating your confirmation. I would like to have your response to me no later than June 1, 2010.

Lisa Myers has posted the official V.E. recommendation on Terex for anyone who would like to review.

Should you have any questions please don't hesitate to contact me.

Thank you,

Robert Murphy,

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE** NH000-01111-01(024) CHATHAM COUNTY                      **DATE** June 9, 2010  
P.I No. 522870

**FROM**  Paul V. Liles, Jr., P.E., State Bridge Engineer

**TO** Bobby Hilliard, P.E., State Program Delivery Engineer  
Attn: Robert Murphy

**SUBJECT** BRIDGE DESIGN VALUE ENGINEERING RESPONSE

The Value Engineering Study for the above referenced project dated April 7, 2010 contained one VE Alternative requiring response from the Bridge Office, VE Alternative E-1. Below is our recommendation for this alternative.

**E-1 VE Alternative** – “Use a center pier for the SR 204 Bridge over King George Boulevard.”

Recommendation: **Do Not Implement**. Based on the typical section provided, there is not a suitable median along King George Boulevard that will provide adequate horizontal clearance to an intermediate bent. Therefore a two span bridge is not feasible.

If you have any questions and/or comments, please contact Bill DuVall of the Bridge Design Office at (404) 631-1883 or at email address [bduvall@dot.ga.gov](mailto:bduvall@dot.ga.gov).

PVL/WMD

cc: Ron Wishon, Engineering Services  
Bill DuVall, Bridge Office



## Murphy, Robert

---

**From:** Jubran, Abdallah (AJ) *OMR*  
**Sent:** Wednesday, June 02, 2010 6:36 PM  
**To:** Murphy, Robert  
**Cc:** Geary, Georgene; Pahno, Steve V  
**Subject:** RE: P.I.#522870 SR 204 and King George Blvd. Improvements.

Robert,

Having two typicals is common. A typical for King George Blvd and another for SR 204 are feasible. Pavement thickness should be determined by traffic volume, truck percentage and soil design values.

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:** Murphy, Robert  
**Sent:** Monday, May 24, 2010 8:11 AM  
**To:** Liles, Paul; DuVall, Bill; McMurry, Russell; Geary, Georgene; Jubran, Abdallah (AJ); Story, Brent; Hopkins, Eugene  
**Subject:** P.I.#522870 SR 204 and King George Blvd. Improvements.

Team,

I have attached a copy of McGee Partners official responses to the V.E. recommendations for P.I. #522870 SR204 and King George Blvd. Improvements.

Please review each recommendation and responses accordingly and inform the Office of Program Delivery if you are in agreement with the response or you disagree with the response. You can send me an email or official letter stating your confirmation. I would like to have your response to me no later than June 1, 2010.

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Thank you,

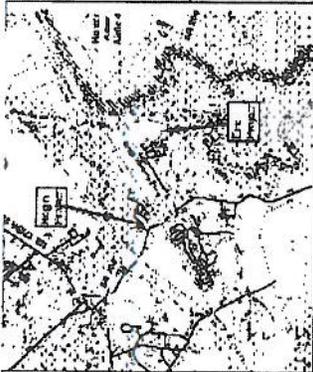
Robert Murphy,

STATE OF GEORGIA  
PROJECT NUMBER  
FHWA-0111-01(024)

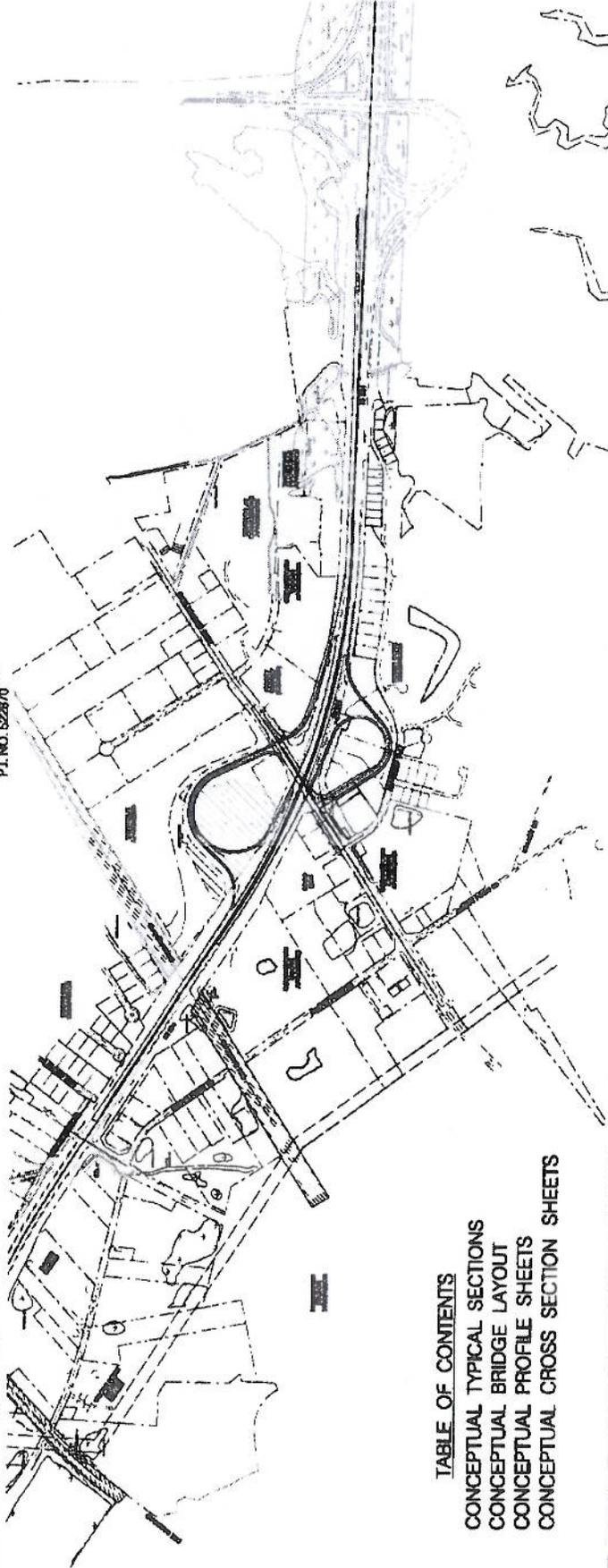
# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## CONCEPTUAL PLAN SET SR 204 AT KING GEORGE BOULEVARD FEDERAL AID PROJECT NH000-0111-01(024) CHATHAM COUNTY

FEDERAL ROUTE # 1A  
STATE ROUTE # 204  
P.L. NO. 522670



LOCATION SKETCH



**TABLE OF CONTENTS**  
CONCEPTUAL TYPICAL SECTIONS  
CONCEPTUAL BRIDGE LAYOUT  
CONCEPTUAL PROFILE SHEETS  
CONCEPTUAL CROSS SECTION SHEETS

THIS IS A CONCEPTUAL PLAN SET. PRELIMINARY AND FINAL PLANS WILL BE COMPLETED AT THE APPROPRIATE TIME.

**McGee Partners, Inc.**  
www.mcgeepartners.com



FEBRUARY 2010

PRECONSTRUCTION STATUS REPORT FOR PI:522870-

SR 204/ABERCORN ST FM KING GEORGE BLVD TO RIO RD  
 MGMT LET DATE: 06/15/2010  
 MGMT ROW DATE: 06/14/2012  
 BASELINE LET DATE: 06/14/2012  
 SCHED LET DATE: 5/17/2013  
 WHO LETS?: GDOT Let  
 LET WITH: 0008840

PRIORITY CODE:  
 DOT DIST: 5  
 CONG. DIST: 12, 1  
 BIKE: Y  
 MEASURE: E  
 NEEDS SCORE: 6  
 BRIDGE SUFF:

SR 204/ABERCORN ST FM KING GEORGE BLVD TO RIO RD  
 MPO: Savannah TMA  
 TIP #: 2000-H-04  
 MODEL YR:  
 TYPE WORK: Widening  
 CONCEPT: INTERCHANGE  
 PROG TYPE: Reconstruction/Rehabilitation  
 Prov. for ITS: N  
 BOND PROJ.:

PROJ ID: 522870-  
 COUNTY: Chatham  
 LENGTH (MI): 2.39  
 PROJ NO.: NH000-0111-01(024)  
 PROJ MGR: Murphy, Robert P.  
 AOH Initials: MAH  
 OFFICE: Program Delivery  
 CONSULTANT: Turnkey Consultant, (Contract with GDOT)  
 SPONSOR: GDOT  
 DESIGN FIRM: McGee Partners, Inc.

| BASE START | BASE FINISH | LATE START | LATE FINISH | TASKS                                    | ACTUAL START | ACTUAL FINISH | %   | PROGRAMMED FUNDS |          |          |               | Date Auth |            |            |
|------------|-------------|------------|-------------|--|--------------|---------------|-----|------------------|----------|----------|---------------|-----------|------------|------------|
|            |             |            |             |  |              |               |     | Activity         | Approved | Proposed | Cost          |           | Fund       | Status     |
| 9/25/2008  | 9/25/2008   | 7/15/2010  | 7/15/2010   | Concept Development                      | 10/26/1999   | 9/16/2002     | 89  | PE               | 2000     | 2000     | 6,629,055.24  | Q05       | AUTHORIZED | 10/25/1999 |
| 9/26/2008  | 10/9/2008   | 7/15/2010  | 7/15/2010   | Concept Meeting                          | 9/16/2002    | 9/16/2002     | 100 | ROW              | 2009     | 2009     | 817,000.00    | L050      | AUTHORIZED |            |
| 10/9/2008  | 10/9/2008   | 7/29/2010  | 7/29/2010   | PM Submit Concept Report                 | 1/8/2010     | 1/8/2010      | 93  | ROW              | 2013     | 2011     | 5,773,586.05  | L050      | PRECST     |            |
| 11/4/2008  | 11/4/2008   | 7/27/2010  | 7/27/2010   | Receive Preconstruction Concept Approval | 1/8/2010     | 1/8/2010      | 100 | ROW              | 2011     | 2011     | 1,124,874.95  | LY20S     | PRECST     |            |
| 10/24/2008 | 10/24/2008  | 7/30/2010  | 7/30/2010   | Management Concept Approval Complete     | 12/2/2009    |               | 85  | ROW              | 2005     | 2005     | 6,798,600.00  | Q05       | AUTHORIZED |            |
| 10/10/2008 | 2/4/2010    | 7/30/2010  | 7/30/2010   | Value Engineering Study                  |              |               | 0   | ROW              | 2005     | 2005     | 39,623,466.19 | L050      | PRECST     |            |
| 9/18/2009  | 11/12/2009  | 4/1/2011   | 5/26/2011   | Public Information Open House Held       | 8/7/2007     | 12/12/2009    | 31  | CST              | LR       | LR       |               |           |            |            |
| 10/24/2008 | 11/13/2008  | 7/16/2010  | 8/5/2010    | Environmental Approval                   |              |               | 0   |                  |          |          |               |           |            |            |
| 11/17/2008 | 12/19/2008  | 7/16/2010  | 8/5/2010    | Pub Hear Held/Comm Resp (EAFONSI, GEPA)  | 12/5/2009    |               | 0   |                  |          |          |               |           |            |            |
| 12/23/2008 | 9/22/2009   | 7/16/2010  | 1/7/2011    | Mapping                                  | 11/11/2009   |               | 50  |                  |          |          |               |           |            |            |
| 3/31/2009  | 9/22/2009   | 7/16/2010  | 1/7/2011    | Field Surveys/SDE                        |              |               | 48  |                  |          |          |               |           |            |            |
| 10/10/2008 | 2/19/2009   | 7/16/2010  | 1/7/2011    | Preliminary Plans                        |              |               | 0   |                  |          |          |               |           |            |            |
| 11/21/2008 | 3/5/2009    | 7/16/2010  | 10/28/2010  | Preliminary Bridge Design                |              |               | 0   |                  |          |          |               |           |            |            |
| 2/26/2010  | 3/1/2010    | 1/31/2011  | 2/1/2011    | Underground Storage Tanks                |              |               | 0   |                  |          |          |               |           |            |            |
| 3/2/2010   | 4/26/2010   | 2/2/2011   | 3/29/2011   | 404 Permit Obtainment                    |              |               | 0   |                  |          |          |               |           |            |            |
| 4/27/2010  | 6/7/2010    | 3/30/2011  | 5/10/2011   | PPPR Inspection                          |              |               | 0   |                  |          |          |               |           |            |            |
| 4/7/2010   | 4/9/2010    | 3/10/2011  | 3/14/2011   | R/W Plans Preparation                    |              |               | 0   |                  |          |          |               |           |            |            |
| 7/20/2010  | 7/22/2010   | 6/22/2011  | 6/24/2011   | R/W Plans Final Approval                 |              |               | 0   |                  |          |          |               |           |            |            |
| 10/29/2010 | 11/11/2010  | 10/3/2011  | 10/14/2011  | L & D Approval                           |              |               | 0   |                  |          |          |               |           |            |            |
| 3/31/2009  | 7/23/2009   | 10/3/2011  | 10/14/2011  | R/W Authorization                        |              |               | 0   |                  |          |          |               |           |            |            |
| 9/23/2009  | 8/20/2010   | 1/10/2011  | 12/7/2011   | Stake R/W                                |              |               | 100 |                  |          |          |               |           |            |            |
| 4/12/2010  | 6/6/2011    | 3/15/2011  | 9/20/2012   | Soil Survey                              |              |               | 0   |                  |          |          |               |           |            |            |
| 8/23/2010  | 5/27/2011   | 12/8/2011  | 9/12/2012   | Bridge Foundation Investigation          |              |               | 0   |                  |          |          |               |           |            |            |
| 6/28/2011  | 6/29/2011   | 10/12/2012 | 10/15/2012  | Final Design                             |              |               | 0   |                  |          |          |               |           |            |            |
| 7/13/2011  | 7/26/2011   | 10/29/2012 | 11/9/2012   | Final Bridge Plans Preparation           |              |               | 0   |                  |          |          |               |           |            |            |
|            |             |            |             | FPFR Inspection                          |              |               | 0   |                  |          |          |               |           |            |            |
|            |             |            |             | Submit FPFR Responses (QES)              |              |               | 0   |                  |          |          |               |           |            |            |

**STIP AMOUNTS**

| Activity | Cost         | Fund  |
|----------|--------------|-------|
| PE       | 0.00         | Q05   |
| ROW      | 0.00         | Q05   |
| ROW      | 0.00         | L050  |
| ROW      | 1,124,874.95 | LY20S |
| ROW      | 6,244,710.67 | L050  |
| CST      | 0.00         | L050  |

**District Comments**

TAS/Need to hold PIOH/3-30-05/high priority project from County; need VE study/3-2-06/GDOT has hired McGee Partners to perform Env study on SR 204 corridor, from HST 5 to US 17/9-12-06/PIOH Nov 14th & 15th/5-2-07/PIOH June 19th & 20th/9-24-07/working on concept report and comments from PIOH/11-7-07/Final concept meeting 12-17-07 Consultant to revised concept report and schedule V.E. Environmental has history impacts to deal with (9/25/09)

| Bridge | Design | EIS | LGPA | Planning | Prog. Develop | Programming | ROW | Traffic Op | Utility | EMG | Conceptual Design | BC=0 01 Tier 4 | Pre. Parcel CT: | Under Review: | Released: | Total Parcel in ROW System: | Options - Pending: | Condemnations- Pend: | Cond. Filled: | Relocations: | Acquired: | Acquired by: | Acquisition MGR: | R/W Cert Date: | DEEDS CT: |   |
|--------|--------|-----|------|----------|---------------|-------------|-----|------------|---------|-----|-------------------|----------------|-----------------|---------------|-----------|-----------------------------|--------------------|----------------------|---------------|--------------|-----------|--------------|------------------|----------------|-----------|---|
|        |        |     |      |          |               |             |     |            |         |     |                   |                | 17              | 0             | 8         | 9                           | 0                  | 0                    | 0             | 0            | 0         | 0            | DOT              | O'Quinn, Andy  |           | 9 |